A UX Maturity Model: Effective Introduction of UX into Organizations

Lorraine Chapman and Scott Plewes

Macadamian Technologies
Gatineau, Quebec. Canada
`{lorraine,scott}@macadamian.com`

Abstract. Getting products out the door with a fantastic user experience (UX) is becoming increasingly more important in all aspects of the business world. Large companies have raised the bar in consumer products in terms of UX design, which has leaked into non-consumer organizations and contexts. The same people, who are also consumers, are now going to work with equally high expectations in their enterprise applications or even using their "consumer" product at work. Naturally, organizations that create products have responded by hiring consultants or professional UX designers. Yet, despite having the right skills, organizations are not necessarily getting the results they want. Achieving great UX design is not just a function or talent of *individuals*, it is an organizational characteristic. Understanding the organization's "maturity" level is a necessary first step for improving the effective delivery of UX design and for enabling the organization to advance to the proverbial "next level."

Keywords: UX maturity, maturity models usability, user-centered design, user satisfaction.

1 Introduction

"I think in order to design great products, you need to have the culture in place."

Cordell-Ratzlaff, 2010

Organizations are more and more seeing the value of hiring user experience (UX) professionals and incorporating user-centered design. More and more programs at universities are cropping up than ever before, to meet the demands in industry. Large name companies such as Google and Apple have incorporated UX design as a centerpiece of their successes. There have been a number of well-known treatises on the introduction of usability into an organization. For example Shaffer's work [1] documents some of the key components organizations must have in place to institutionalize usability. While not in conflict with Shaffer's ideas, here we focus more on how to effectively recognize what stage and organization is in with regards to usability and the key areas of focus for transitioning to the next stage.

There is a belief in the business value of UX design that simply did not exist 15 – 20 years ago [2]. There are more individuals trained and capable of excellence in UX design. However, beliefs and skilled UX resources are not enough to ensure that the UX design aspirations and goals for an organization are met. The user experience of a product is not the result of a UX designer alone – it is a result of how the organization as a whole executes on the product creation. There are a number of ways of decomposing the elements of user experience design and success. For the purposes of this paper, we will consider the following construct: Product value and user experience largely comes from two essential values.

1. An *emotional* value ("I love my new smartphone.")
2. A *utilitarian* value ("I can call and text my friends from anywhere.")

These two values are linked for most products in the sense that attaining a positive emotional response – over the long term – is difficult without at least some utilitarian value. We see emotional and utilitarian values delivered by three aspects of design:

1. Aesthetics
The product literally "looks good." People will often describe the aesthetics in non-scientific terms such as "slick," "clean," and "cool." When explored more deeply, these characteristics indicate at least some elements of aesthetics influencing their responses [3].

2. Functionality
The product allows the user to accomplish a goal that they value. For example, a user can scan their computer for a virus, make a phone call, or print a document. However, having functionality that is of value by no means ensures that it is easy to accomplish, easy to discover, more efficient or satisfying to use.

3. Usability
Usability is the manner in which functionality is delivered and experienced by the user. Is it effective, efficient, satisfying, and simple? [4]

It is not uncommon for some companies to focus primarily on the utilitarian value of the product and, in particular, on the functional aspect of the product design. For many product development program, success is defined by the number features that can be fit into each release cycle. Yet a great product delivers a user experience that combines aesthetics, functionality and usability to meet both the user's emotional and utilitarian needs. In discussing UX maturity, we are really postulating the following two key points:

- Organizations higher up on the UX maturity scale are more able to deliver effectively to the combination of functionality, aesthetics, and usability that is appropriate for their business goals.
- Organizations at certain levels of maturity implement processes, capabilities directed towards improved success in UX design that is appropriate for their level of maturity. That is a "stage 2" company, cannot jump to a "stage 5" design process.

There is an evolutionary process associated to moving through the different stages of UX maturity.

Knowing and understanding an organization's true UX goals and its level of maturity can guide decisions ranging from where an organization seeks help (by hiring internally or using consultants), to what processes they use and implement, and how decisions are made.

In our experience, there are six key indicators of UX maturity.

1. The *timing of UX* involvement in the design and development process. The earlier UX is involved, the more mature the company.
2. The *UX expertise and resources* in house and/or ability to bring in UX expertise quickly as needed.
3. The use of appropriate *techniques and deliverables* to obtain and understand user input and capture UX design.
4. The *leadership and culture* in the company. How well the leaders and company as a whole appreciate the value and necessity of UX design from a business perspective.
5. The degree to which UX processes are *connected and integrated with other* corporate processes that enable individuals to work together to create the user experience of the product(s).
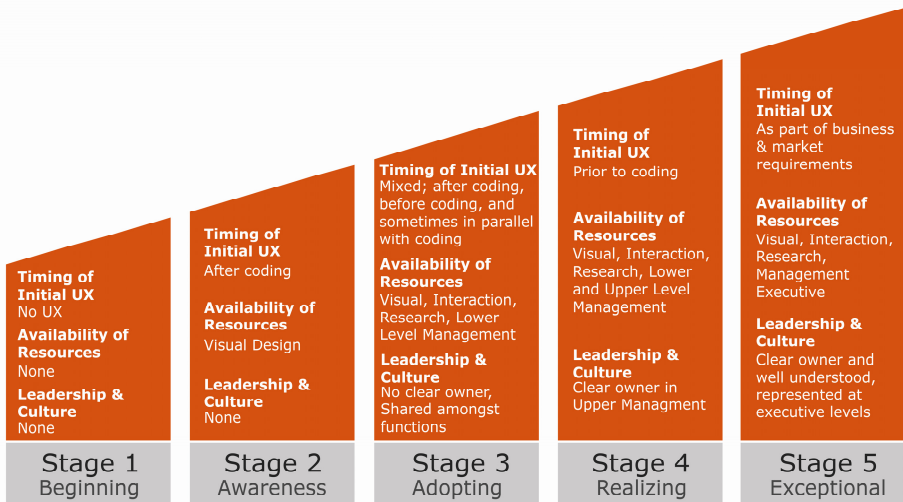6. *Design thinking is applied in the broadest perspective* possible to drive consistent customer experience.

Fig. 1. The Stages of UX Maturity Model

Considering these criteria, we have created a model for assessing an organizations level of UX maturity (see Fig. 1). This is one model by which organizations can assess their level of UX maturity; however, there are other ways of looking at the UX maturity of a company, other factors or weighting of factors that could be considered [5]. The key factor is using models that can help with understanding a complex situation, making decisions and gaining insights [6]. The relevance in this model is less about exactly what stage an organization is in, and more about the insights and ideas decision-makers and influencers can utilize by applying this model to their own organization. For this reason, rather than focusing on absolutely measuring maturity, the model focuses on indicators of maturity and relating these indicators to stages of UX maturity. The intention is that the indicators will spur decision makers into action. If an organization aspires to "stage 5" UX goals, but there are several indicators that suggest the organization is at "stage 2," decision-makers can use the indicators to assess how they may progress to the next level.

2   Stage 1: Beginning

To the extent an organization thinks about UX design at all, at this stage an organization will typically see it simply as visual design. Design is perceived as something to be applied on top of the product's functionality. For software, it is generally addressed at or near the end of coding. There are no professional UX designers in house; often developers are responsible for the UX design. There may not even be product management, or product management is relegated to making suggestions about the design or functionality to developers. Essentially this means all the key indicators are "dark"; there is no expertise, techniques, or design-thinking culture that would suggest UX design is even being attempted in a meaningful way.

2.1   Implications

Products must differentiate themselves primarily on functionality or other factors outside of the direct user experience. This includes customer support, salesmanship, or the ability to technically integrate with other products or systems. Products created in this way are at high risk of displacement if competitors are able to match their primary value propositions while differentiating through a superior user experience. For example, an information management system at a hospital may be valued and purchased because it can "hook into" other hospital management systems. However, if it is cumbersome to use and causes significant overhead to the personnel who are interacting with it, another compatible product offering a better experience of information management could eventually displace it.

2.2   Key Signs of an Organization at This Stage

- UX design is almost never talked about or it is discussed only in terms of graphical design.
- Users are not consulted in the product design and development process.
- If any user suggestions or complaints are gathered, they are not critically evaluated. They are either dismissed or implemented verbatim.
- Any UX design activities have very little formal structure (developers do the necessary elements of screen layout) and are probably not considered part of a UX design activity.
- There are no UX design goals tied to business objectives.
- Product management may be non-existent or minimal.

2.3   Critical Success Factor to Achieve the Next Stage

Taking the first step towards UX design involves ensuring that the relevant business issues are correctly identified as being UX design-related. This awareness is often created through a combination of a significant "shock" event (for example a competitor wins a major sale because of their UX design) along with some degree of education and awareness occurring within the organization.

3   Stage 2: Awareness

At this stage, the organization may be considering UX design, but applying very little structure around UX activities. Often there is a significant amount of misunderstanding surrounding the real nature of UX design. Therefore, usually there are no UX professionals employed in the organization, though an outside "guru" may be brought in or consulted. UX design improvements or insights gained during the product design phase are often implemented in bits and pieces in the final product.

3.1   Implications

Out in the marketplace, the products must still differentiate themselves primarily on functionality or other aspects of the business beyond the direct product experience. The risk of competitive displacement remains high if competitors can match the key value propositions while differentiating themselves on user experience. Organizations at this stage must decide to what extent they wish to invest in introducing formal UX processes and practices in order to forestall the competition.

3.2   Key Signs of an Organization at This Stage

- UX design is a "hot" topic of debate for at least some projects.
- People are starting to make design decisions or suggestions based on articles, a conference or seminar attended or a personal interpretation of UX.

- Employees conduct design reviews with considerable discussion, yet become frustrated with the limited progress being made and disagreement on how to actually resolve UX design issues.
- Most user requirements are confined to marketing input or functional improvements.
- There is little user feedback or it is limited to asking users their opinions on design or functionality.
- UX design goals are general or hard to measure (for example, "the interface should be intuitive and straightforward").
- A UX professional is consulted during a projects too late in the process.
- There is inconsistent awareness and buy-in to making UX design investments, such as training, beyond a few people.

3.3   Critical Success Factor to Achieve the Next Stage

In this stage, organizations have an awareness of UX design having potential business value, but minimal to little understanding of what that means. Education is required to pivot the organization to higher maturity. While training is useful, it typically does not include decision makers and, therefore, an organizational understanding of UX design is not achieved. At this stage, organizations should seek to launch a pilot project, overseen by experts, with a clear connection between UX design goals and a business objective. It is this connection that pulls in the key decision makers and allows them to see the value of UX design; otherwise, organizational maturity may stagnate.

In our experience the transition from this stage to the next is the most difficult and most crucial, largely because it requires the most significant change in company. As the Director of Product for a company in the aircraft industry put it, "this is simply not in our DNA". Not only was it necessary to determine the right activities and projects to focus on, but also at least as much time has been (and is being) spent understanding individual challenges, agendas, concerns and perspectives of key decision makers and stakeholders. The effort is less on understanding what the right logistics are, and more about incorporating and dealing with change in roles and perspectives.

4   Stage 3: Adopting

An organization at this stage is experiencing the growing pains of adopting more sophisticated UX practices; some projects run smoothly and experience successful outcomes, while others fail miserably. Typically, there is growing belief among the leadership team of the value of design (although the leaders themselves may have little knowledge of UX or mixed knowledge of UX) and investments are being made in professional hires or contractors/firms. The prospects for using UX design as a competitive differentiator are positive; however, there is a high risk of getting stuck at this stage, or worse, "regressing" to old product design habits. This happens if the occasional project does not go well or new leadership comes in and acts to revert progress in maturity. This stage definitely has expertise in house or consultants involved,

although it may not always be making the best use of the resources or UX resources are significantly overloaded in terms of deliverables and responsibilities.

4.1   Implications

Some products are now distinguishing themselves based on UX design, or at least they are not losing to competitive alternatives because of UX shortcomings. Success is still inconsistent across the brand (as is the design), and customers may not associate the company itself with excellence in UX design. However, the organization is starting to realize tangible difference to the business because of the benefits of an improved UX to their products.

4.2   Key Signs of an Organization at This Stage

- There have been some successful products recently where the UX design has clearly had positive business impacts.
- UX goals are measurable and clear on some projects. For example, the organization may be establishing user error rate targets, efficiency measurements, and user satisfaction goals.
- Users are regularly consulted on many projects; although perhaps not always in the right ways or in time to inform design decisions.
- The organization still experiences some issues with UX projects. It may be that good UX design is created on paper, but not fully realized in the product.
- There is no senior leadership or management in UX. The UX function may report into Marketing, Product Management or Engineering or is distributed between individuals across projects.
- There is no standard design and development process being practiced across the organization. For example, some projects or parts of the organization may insist on usability testing of products, while others do not.
- Similarly, roles are not standardized throughout the organization. On one project a business analyst may be responsible for understanding user context and motivations; on another project it is a UX researcher.
- There is a lot of discussion about UX design within the organization. Successful products/projects that involved UX design, and competitors who have used UX design as a differentiator, have made executive decision makers take notice. These executives and influence leaders now have strong and differing opinions on product design.
- A common perspective on UX design does not exist throughout the organization. The expertise exists within the company at the project delivery level, not at the executive level.

4.3   Critical Success Factor to Achieve the Next Stage

When it comes to organizations at this stage, moving to the next level means setting clear UX goals for teams on products/projects and requiring accountability from UX experts, as well as assigning empowerment to UX experts. However, the UX experts only are one key component. Related roles need to be defined so that everyone on a project/product feels they can contribute to UX outcomes on a project. Obviously senior leadership and experience is required to help align and co-ordinate UX resources and other functions. Among the best next steps is to augment the management and executive team with senior UX leadership and understanding. If this is not done, then while a desire for quality UX results may be in place, the lack of understanding at the decision-making level can undermine the experts at the less senior levels.

Moving through this stage through to stage 4 and even beyond is less of a challenge of people and change management and more about refining and adding nuances. As a medical company we worked with – who already had a well defined UX process – pointed out, our real value came in enhancing aspects of requirements gathering, subtleties in research methodologies and interpretation of data. This is significantly less challenging than a fundamental change to process and roles. It was more about additional skill sets and methodologies. They then could then incorporate and further on their own for future work.

5   Stage 4: Realizing

Stage 4 organizations, those displaying excellence in their UX design maturity, have moved far beyond discussing and arguing about whether or not it should be part of design and development. They are now more concerned with the nuances or particulars of improvement in UX. UX goals are clearly embedded with the organization's mindset and people understand their roles in the process.

5.1   Implications

The company has a reputation for UX excellence in their products and often wins on this point. It is used as a selling proposition and a differentiator. The company brand is clearly linked to great UX design.

5.2   Key Signs of an Organization at This Stage

- Many examples of successful products where the UX design has clearly had positive business impacts.
- UX goals are measurable and clear on almost all projects.
- UX is no longer viewed as hot topic, rather it has become table stakes. Discussion around UX is more likely to be about the latest techniques, process improvement and how to better incorporate it at all levels of the organization. Discussions amongst key stakeholders are no longer about where UX fits in a process or who is responsible for making design decisions.

- There is senior management leadership and accountability for UX at the same level as product management, development, marketing, sales, and other functions.
- A strong set of practices, processes and guidelines exist that are consistently utilized by project teams.
- If excellence in UX design is sacrificed, it is an intentional trade-off driven by business goals with well-understood consequences.
- Users are regularly consulted for product/projects. Design research with target end users is done consistently with correct techniques.
- UX design is considered at a "product family" or portfolio level and the decision-making processes and development are organized in recognition of this need. Each product is designed with other products that the customer might also use in mind so that the transition is seamless because consistent UX designs are used.
- All functional areas (such as Product Management, UX, Marketing, Engineering) are certain about their roles in the UX design process and understand each other's roles. While UX design experts make UX design decisions, ideas and innovation come from the entire team involved in product design and development.

5.3   Critical Success Factor to Achieve the Next Stage

Organizations at this level have a highly effective level of UX design and it is difficult to move beyond this level of maturity. We do believe, however, there is a natural evolution a company can make. Whether or not it is strictly an evolution of UX design is debatable, but we include it here for completeness. The next step beyond excellence is when the organization realizes that the product experience is just one part of a larger experience delivered to customers. Organizations must start planning complete customer experiences that include, but go beyond, the UX of the product alone. However, to move beyond stage four means understanding from a customer point of view what the experience is with the company as a whole and how the product fits in with that experience. This includes all of the touch points and processes that happen around the product such as, discovering it, buying it, installing it, using it, upgrading it and "sun setting" it.

6   Stage 5: Exceptional

When an organization is exceptional in its strategic implementation of UX design principles, UX design is firmly integrated into all aspects of customer experience – these organizations have fully realized their UX maturity goals and design thinking truly permeates all aspects of the organization. The same type of thinking that went into designing the product experience is present across the board in all customer touch points, although different experts and roles, not just UX designers, will implement it.

6.1 Implications

The company has a "gold standard" reputation for excellence in all aspects of customer experience (for example, marketing, sales, support, product design). This reputation is significant in achieving business goals and maintaining a competitive advantage.

6.2 Key Signs of an Organization at This Stage

- All aspects of Stage 4 product-orient UX excellence are strongly entrenched.
- When designing a product, the whole "ecosystem" of a user's experience with the company/brand is considered.
- UX goals are linked to business objectives with the total customer experience in mind.
- The first thought on UX design in a project is probably more about the overall customer experience rather then the intended user experience for just the product. This manifests itself in up front UX and customer experience research and the creation of artifacts such as customer experience maps.
- There are senior leaders accountable for customer experience and this part of the organization works with all functional groups that create/deliver customer touch points such as, UX designers, marketing, sales, and support.
- Research in UX is strongly coordinated with other customer experience feedback processes.

7 Conclusion

As discussed in the introduction, this 5-stage framework may not exactly match the specifics of a particular organization. In the real world, organizations may display a mix of characteristics from different stages across their organization. Nevertheless, we believe assessing a company against some of these key indicators can provide insights into opportunities and issues that will allow a company to adjust its trajectory and attain its business aspirations that are dependent or related to successful user experiences practices and their execution. Organizations, like people, learn by doing. And to do properly experts need to be hired or consulted. Identifying projects, deliverables, activities are key to progressing. Training, attending talks, reading books, is certainly helpful, but not enough. UX design is no different than any other function in this regard.

References

1. Shaffer, E.: The Institutionalization of Usability: A Step-By-Step Guide. Addison Wesley, New York (2004)
2. Trenner, L., Bawa, J. (eds.): The Politics of Usability: A Practical Guide to Designing Usable Systems in Industry. Springer, Berlin (1998)

3. Lavie, T., Tractinsky, N.: Assessing Dimensions of Perceived Visual Aesthetics of Web Sites. International Journal Human-Computer Studies 60, 269–298 (2004)
4. International Organization for Standardization: Ergonomic requirements for office work with visual display terminals (VDTs) – Part 11: Guidance on usability (ISO Reference No. 9241-11:1998(E)) (1998)
5. Vetrov, Y.: Applied UX Strategy, Part 1: Maturity Models. UX Matters (2013), `http://www.uxmatters.com/mt/archives/2013/12/applied-ux-strategy-part-1-maturity-models.php`
6. HIMSS Usability TaskForce.: Promoting Usability in Health Organizations: Initial Steps and Progress Toward a Healthcare Usability Maturity Model. Health Information and Management Systems Society (2011)