

Usability Goal Setting Tool

A product that may be appropriate for one context may be totally inappropriate for another context. Setting goals is an important step early in the design process. Setting goals before design gives the team a target to achieve. A goal is a commitment that a designer makes to his client or his management. Goals help guide the design process, make the design activity tangible and help evaluate the design. Setting goals early and getting agreement from stakeholders is important. In my interactions with software development teams, I have observed that teams are often unclear about the goals of the product they are designing. This tool emerged during my work to help designers set goals and evaluate products against them.

I differentiate between *user goals* ("enjoy a peaceful vacation" or "ensure a secure future"), *business goals* ("capture the youth market", or "save costs by pushing sales online") and *product goals* ("the website will support planning and having a vacation end-to-end" or "the EVM should enable all users to vote without external help"). In this document, I focus on product goals. Further, I focus on the subset of product goals related to the usability and user experience of the product.

How to Use this Tool

Usability Goal setting Tool (UGT) is envisioned as a part recommender system and a part social-networking tool. It helps specify high-level goals and break them down into more concrete, measurable goal parameters. Each goal parameter is assigned a weightage.

The goal setter starts using UGT when he / she is clear about the product brief and has developed sufficient understanding about the domain, the problems, the context and users and is ready to set goals. UGT has four steps: initiate, set goals, review goals and set evaluation guidelines and share.

- *Initiate*: UGT begins by helping the goal setter create a product profile and user profile(s) (pages 3-4). Please note that if your product has multiple user types, you will need to fill out separate user profiles for each of them. In the automated version of the UGT, these will form the input for the recommender system. In the current paper version, these serve as a reminder to the goal setter and a means to look up the rest of this document.
- *Set goals*: The goal setter then sets goals by assigning a weightage from 0 to 5 to the listed goal parameters (pages 5-6). Depending on the context of the project, some goal parameters may have high priority, while others might be irrelevant. The goal setter should also write a line or two under each goal parameter to explain / justify the priority. Please note that if your product has multiple user types, your user experience goals for each of them will be somewhat different – so fill out separate forms for each of them.

This document presents a list of potential goal parameters grouped by some high-level goals and suggests weightage for different product and user contexts (pages 7-20). These goal parameters and their weightages are derived from experience in past projects. This list is not meant to be comprehensive and does not cover every aspect of user experience. It is suggestive. At all times the goal setter has the freedom to define new goal parameters, edit or re-word them and to group them differently. At the bottom of the list, a few blank lines have been provided for this purpose. Similarly, the goal setter also has the freedom to assign a different priority than the one suggested here.

The meanings of the weightages are:

- USP (5): This goal parameter is the unique selling proposition of the product. This goal parameter is among the top 3 aspects of user experience for this product. The success of this product depends on doing well on this parameter. The product must be thoroughly evaluated against this goal parameter.
- Very important (4): This goal parameter is one of the top six or seven user experience qualities of this product. The product must be evaluated against this goal parameter explicitly.
- Important (3): This parameter is important - among the top ten user experience qualities of this product. The product should be evaluated against this goal parameter explicitly unless the evaluators are convinced that they know the outcome. In any case, do report any adverse findings.

- Usual relevance (2): This goal parameter is of the usual, vanilla relevance. This goal is quite commonly met in most products of this kind. It is not among the top ten important user experience qualities of this product. This goal parameter may not be explicitly evaluated for, but do report any adverse findings.
- Somewhat relevant (1): This goal parameter is only somewhat relevant to the product. The tasks it affects are both infrequent and non-critical. It is unlikely that the product is evaluated against this goal parameter.
- Irrelevant (0): The goal parameter is not relevant to the product.
- *Review goals and set evaluation guidelines:* After setting goals, it is important to review them. In the first pass, there is a tendency to over-assign priority. As rule of thumb, assign weightage 3 or more to less than 10 goal parameters. Add up weightages for all your goal parameters to see how you are doing:
 - If your total is < 65, you are perhaps too low – consider giving higher weightage to some goals – push the 3s to 4s and 4s to 5s.
 - If your total is 65-77, you are on the lower side, but not too much. You have room to move up a bit if you want, though you don't have to.
 - If your total is 77-88, you are well-balanced. You might still consider tweaking the weightages among goal parameters to get the relative weightages right.
 - If your total is 89-98, to you every goal parameter seems important, but it could be. Consider pushing some 5s to 4s and 4s to 3s, but you don't have to.
 - If you are >99, you are perhaps asking for the moon. Try to revise downwards.

This is also a good time to decide how each goal might be evaluated – this document suggests some ideas (pages 7-20). Use them wisely.

- *Share:* Sharing with the team is a good idea – especially goals. All strife will end and the world will be a peaceful place if the whole team is on the same page about what they are trying to build. The online version of UGT will have really fancy social-networking style features to share and negotiate goals. For now a print-out or an email attachment with tracking changes in Word will have to do.

Product Profile

A brief description of the product:

Business goals of your organisation in launching the product:

What is the current version of the product?	1 st / 2 nd / 3 rd / 4 th / nth
What industry domain does the product belong to?	
What work practice domain does the product belong to? (pick only from the list, you can pick multiple)	Life critical / Biz critical / Goal oriented / Learning / Information / Casual / Gaming Enabling technology for disabled or similar
What will be cost to the end user compared to products in its category?	Premium (iPhone) / Low end (1110) / Not free, but I don't pay (intranet) / Free with other product or service (jetairways.com) / free to use (Wikipedia)
Platform(s)	Desktop / Web / Mobile / IVR / TV / Custom
How many user profiles will use the product? Give a short (2-3 word) persona description for each profile and fill out user profile document for each profile.	
User Profile 1:	Persona 1:
User Profile 2:	Persona 2:
User Profile 3:	Persona 3:

The following questions are optional, but they will help set a context and may help analyse the product. Please answer all questions that you can.

How will you rate the current user experience of the product?	(5 = excellent, best, 3 = average, 1 = awful, worst)
How will you rate the HCI process followed by your team in this project?	(5 = excellent, best, 3 = average, 1 = awful, worst)
Process model followed	Waterfall / agile / RUP / other
Estimated project size (person-months)	
Actual project size (person-months)	
Estimated HCI effort (person-months)	
Actual HCI effort (person-months)	
In your experience as a product manager / project manager / quality expert / ---, how will you assess this project on the following parameters.	
Cost overruns	(5 = excellent, much below typical, 3 = typical, 1 = awful, much above typical)
Change tickets after release	(5 = excellent, much below typical, 3 = typical, 1 = awful, much above typical)
Number of updates after release	(5 = excellent, no updates, much below typical, 3 = typical number of updates 1 = awful, too many updates)

User Profile

Please fill this document separately for each user profile. We will use the information in this form to recruit appropriate users and to design a usability test.

User Profile: _____, Persona: _____

What age range is targeted for these users?	
What is the lowest level of tech-savvyness that you expect among these users?	<input type="radio"/> Like a software programmer who loves Linux S <input type="radio"/> Like a techie manager who can install MS Office from a CD <input type="radio"/> Like an accountant who checks mail every day <input type="radio"/> Like an office peon who can save contacts on a phone <input type="radio"/> Like a grandmother who can't save contacts on a phone
How frequently do you expect these users to use the product? (pick a range if different people are likely to use the product at different frequencies)	<input type="checkbox"/> Once in a lifetime <input type="checkbox"/> One a year <input type="checkbox"/> Once every month <input type="checkbox"/> Once every week <input type="checkbox"/> Daily <input type="checkbox"/> A few times a day <input type="checkbox"/> Continuously (>10 times a day)
How complex do you expect this application to be? The numbers in the brackets denotes number of screen types, tasks or states that these users encounter with the product. If your product has several user profiles, count only those parts that this user profile is likely to use.	<input type="radio"/> Very Complex (50+) <input type="radio"/> Complex (30-50) <input type="radio"/> Moderate (11-30) <input type="radio"/> Simple (4-10) <input type="radio"/> Very simple (3 or less)
How will you describe this market? Look at the examples and pick the one that comes closest to your product.	<input type="radio"/> Mass market (EVM, paper currency) <input type="radio"/> Wide market (gmail, MS Office) <input type="radio"/> Niche market (youth, lawyers, elderly...) <input type="radio"/> Internal app for trained staff (call centre) <input type="radio"/> Thick domain product for experts (online trading, radiology equipment, cockpit)
What value does the product add to the user? Why would the user use your product? What is the motivation? (tick all that apply, but be critical)	<input type="checkbox"/> I have no intrinsic motivation to use it <input type="checkbox"/> I have options, including doing things manually <input type="checkbox"/> To socialize <input type="checkbox"/> It gives me a cool lifestyle <input type="checkbox"/> It entertains me <input type="checkbox"/> I have been using it, I am used to it <input type="checkbox"/> It informs me <input type="checkbox"/> It makes things convenient, saves my time, helps me do my job better <input type="checkbox"/> It makes things accessible <input type="checkbox"/> It makes money for me / it saves me money <input type="checkbox"/> I have no choice, I have to use it

Described any of the following aspects of your targeted users that you think are relevant:

- Profession(s), education, gender,
- Inclusion criteria – any requirements that qualifies them to use your product (e.g. bank account, salaried job, net connection at home etc.)
- Exclusion criteria – any situations that disqualifies them from using your product

Goal Parameters and Weightages

	0	1	2	3	4	5
Learnability						
1. Findability: options / data / information should be visible / easy to find						
2. User should take less time to learn: (e.g. in < 10 minutes, in < 2 hours practice, in < 2nd attempt)						
3. Users should be able to learn on their own						
4. Product should be internally consistent						
5. Product should be consistent with other products, older methods / past habits of users						
6. Product should be consistent with earlier version						
7. User should remember / retain critical, but infrequent tasks						
Speed of use						
8. User must be able to do the primary task / the most frequent tasks quickly, easily, at all times						
9. User should be able to navigate quickly and easily						
10. Product should not load user's memory / product should not put cognitive load on user						
11. Flexibility: User should control the sequence of tasks						
12. User should be able to complete frequent / critical tasks in specific time / no. of steps / in less efforts						
13. Product should be personalised for the user automatically						
14. Product should be localised for specific market segments						
15. User should be able to customise the product for himself						
Ease of use						
16. Interface should clearly communicate the conceptual model						
17. Intuitiveness: User should be able to predict the next step / task						

	0	1	2	3	4	5
18. No entry barrier: user must be able to complete critical tasks						
19. Product should require no unnecessary tasks						
20. Product should automate routine tasks / minimise user task load						
21. Product should be always on, always accessible						
Ease of Communication						
22. Information architecture: Information should be well aggregated, categorised, presented						
23. Communication should be clear / user should easily understand text, visuals						
Error-free use						
24. Product should give good feedback / display its current status						
25. Product should not induce errors						
26. Product should tolerate user's errors / forgiving interface / should prevent errors						
27. Product should help user recover from errors / help users troubleshoot problems						
Subjective Satisfaction						
28. User should feel in control of the product / behavioural appeal						
29. User should feel emotionally engaged with product / brand / product should be fun / reflective appeal						
30. User should find the product aesthetically appealing / product should have a visceral appeal						
Other product goals						

Learnability

1. Findability

Stuff that users are looking for – menu options, buttons, links, data, information – should be easy to find. Either it should be visible up-front or at least hidden in a predictable place that is easy to find. Important stuff should catch people's attention and not be lost in a big clutter of unimportant stuff. The information pyramid should be inverted, bringing up as much information as possible without overwhelming the user.

Assign priority in the following way:

- **Assign weightage 4-5** if your product is targeted to low-tech users or if the application complex, business-critical or life-critical.
- **Assign weightage of 2-3** if your product is meant for frequent use (people will get used to it after a while or learn shortcuts, though make sure that the frequent tasks are not too deep) or if your product is extremely simple.
- **No product has set 0 or 1** for this goal parameter.

Ideas for evaluating this goal parameter:

- Ask users to think aloud while doing tasks that requires them to find information or menu options. Look for confusions, unmet expectations.
- In a performance test, give users a goal to achieve that requires them to locate options in different parts of the product. Count errors or the amount of time it takes them to do so.
- During a review, look for data / options that are not organized consistently with the users' mental models. These problems are hard to spot unless the reviewers are familiar with the users' mental models.

2. User should take less time to learn

To each product one mentally assigns an acceptable learning time. To drive a car, it could be 2 weeks, but to start using a new mobile phone, or to book a ticket on an airline's website it has to be less than ten minutes. For a ticket vending machine at the railway station, it could be no more than a minute. In some products it is really important that the product can be learnt within this time limit. In other products it is relatively less important.

Assign priority in the following way:

- **Assign weightage 4-5** if your product is business critical or an enabling technology in a public place and it is meant to be used by users without supervision
- **Assign weightage of at least 3** if the product is targeted to low-tech savvy users, and even for users who are medium-tech savvy if the product is complex.
- **Assign weightage of at least 2** if the product is not time-critical e.g. an entertainment product or a product to be used in a social context, where peers are present to help.
- **No product has set 0 or 1** for this goal parameter.

Ideas for evaluating this goal parameter:

- After a predetermined demonstration or a training session (the duration of which needs to be determined) and perhaps a practice session, ask the user to do benchmark tasks. Observe user errors, confusions and difficulties.
- In a review, invite new evaluators each time and evaluate the time they take to learn to use the product. Even so, users' learning time is likely to be underestimated during a review.

3. Users should be able to learn on their own

For many products, there are no training programmes and users need to figure them out on their own. At times people may have a general understanding or expectation of how this product works (e.g. a home accounting application). At other times, the product concept may be completely new to them (e.g. the first buyer of the Nintendo Wii in the neighbourhood). Some products targeted to in-house users tend to have training programmes included (e.g. call centre applications, but not intranet applications),

but a training programme may not cover all situations and there would still be need to learn a few things on one's own, on the job.

Assign priority in the following way:

- **Assign weightage of 5** if your product is to be used in an emergency (like the emergency door of the airplane).
- **Assign weightage 3-4** if your product is targeted to medium to low tech-savvy users particularly if these users may be alone while using it for the first time.
- **Assign weightage of 0-1** for products meant to be learnt through a training programme only (e.g. a call centre application, but also could be life-critical non-emergency products) or if the tasks are casual and users are likely to learn to use this product from a friend (e.g. entertainment and socializing products).
- **Assign weightage of 2** for most other products and situations.

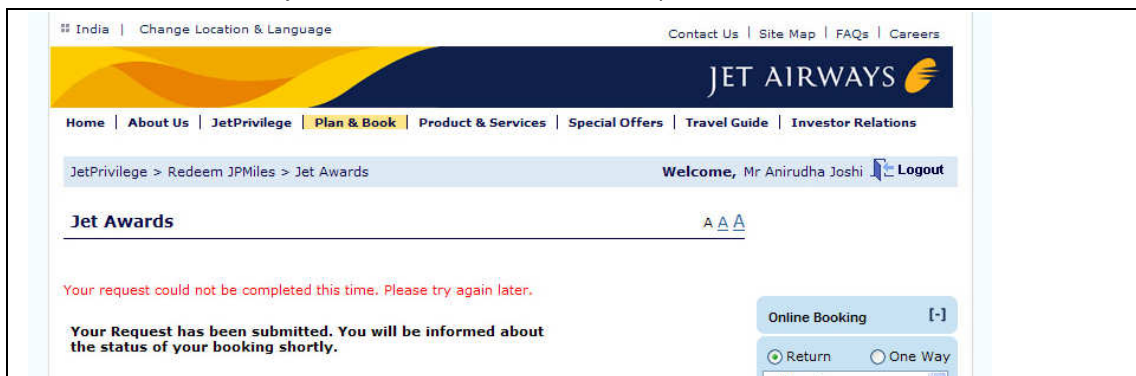
Ideas for evaluating this goal parameter:

- Give the users a goal to achieve and ask them to try to use the product on their own to figure out if they can use it.
- During a review, invite new reviewers (who are using the product for the first time) and pay particular attention to problems faced by the new reviewers.

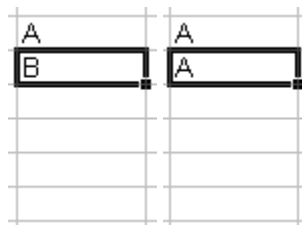
4. *Product should be internally consistent*

Internal consistency is very important, but it is easiest to understand it by looking at examples of internal inconsistency.

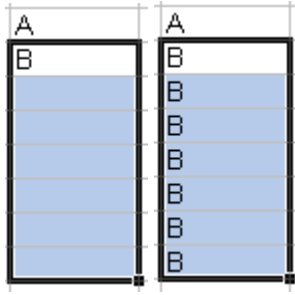
Look at the following messages (one in red, the other in black) that came when I was trying to get an award ticket on Jet Airways. (I swear, there was no PhotoShop on this one.) Am I done or not?



Another example comes from Microsoft Excel. Do this experiment at home – type “A” in one cell and “B” in the cell below. Now select the cell with B in it and type Control + D. What happens? A gets copied over in the cell where B was earlier. Fair enough.



Now repeat the same experiment, but instead of selecting only the cell with B in it, select the cell with B in it and a few more cells below it before typing Control + D. What happens? Voila, now B gets copied over. That's internal inconsistency.



You might think I am nitpicking on Microsoft. Perhaps I am, and one or two such inconsistencies the users can live with – just like the dog can live with one or two fleas – provided it happens in a relatively non-critical task. But these things build on each other. If you put a hundred fleas in the dog, it will surely not like it.

Assign priority in the following way:

- **Assign weightage 4-5** if your product is life-critical, business-critical or a premium product or if it is targeted to low-tech savvy users.
- **Assign weightage 2-3** for most other products.

Ideas for evaluating this goal parameter:

- Ask users to perform a set of tasks and probe them to see if there are internal inconsistencies that cause confusion in the users' minds.
- During a review, inspect the interface of the product and look for internal inconsistencies.

5. *Product should be consistent with older products / past habits of users*

People sometimes have deep-rooted habits. For example, savings bank account holders routinely scan their passbooks, which are designed in a particular format. If the ATM transaction slips are laid out in a similar format, it will become a lot easier to read. Apple Macintosh became a big hit by standardising across applications many of the menus (File, Edit, View, Options etc.), sub-menus (File > New, Open, Save, Edit > Undo, Cut, Copy, Paste) and keyboard shortcuts (Command + S, Command + Z, X, C, V). All of these are still to be found in most applications after 25 years.

Assign priority in the following way:

- **Assign weightage 3-5** for most products, and particularly at the higher end if your product is targeted to higher age groups (50+) or to low-tech savvy users. These users hate changing their habits.
- **Assign weightage 1-2** only if there is a high motivation for users to change their habits (e.g. you save them money and time or if the product is to be used continuously, and a bit of habit change can do wonders in the longer term).
- **Assign weightage of 0** if you are targeting toddlers or very young children – these kids have very few past habits.

Ideas for evaluating this goal parameter:

- Ask users to perform a set of tasks and probe for inconsistencies with what people do in real world or older habits.
- Do a field study – introduce the product in the life of a few users and see where it contradicts past habits.
- During a review, look for design elements in the product that might be inconsistent with users' current habits. These problems are hard to spot in a review unless the reviewers have intimate contextual knowledge about the users' current habits.

6. *Product should be consistent with earlier version*

Autodesk Animator Pro (a DOS based application) was a market leader in 2-D animation till the mid-90s. It had a loyal base of graphic designers who had trained to use it, but people who tried to learn on their own did not do that well – its interface was very incompatible with other Windows-based applications that they were familiar with. Then Animator Pro for Windows was launched, and the product died. Then Netscape Navigator was a free browser with 90% market share. But it regularly expired its installation

and forced the users to download a new versions. What was worse – they changed the menu hierarchy in almost every version. Do you use Netscape Navigator today? Of course, MS Office made a big shift from the Apple menu structure when it moved from Office 2003 to Office 2007, and it was a painful first step for many users, yet MS Office survives. But you don't try that at home unless you are sure what you are doing.

Assign priority in the following way:

- **Assign weightage 4-5** if the current version of the product already has an established user base that you want to carry forward to the new version.
- **Assign weightage 2-3** if the current version of the product has many usability complaints from the current users or if the current user base is much smaller than the one you intend to achieve with the new version.
- **Assign weightage 0** if you are working on the first version of the product. But carefully design it and evaluate it for future expandability. Strangely, there are no situations where people assign a weightage of 1 to this goal parameter.

Ideas for evaluating this goal parameter:

- Ask users of earlier version to do critical tasks with the new version. In a think-aloud test, look for any problems, hesitations, confusions etc. In a performance test, look for problems that occur repeatedly (e.g. use of wrong keyboard shortcut or looking for items in the wrong menu.)
- During a review, inspect the earlier version first and look for inconsistencies that have crept in the newer version.

7. *User should remember / retain critical, but infrequent tasks*

Many users may use your product intermittently. Some products are meant to be used intermittently (e.g. booking an airline ticket, filing a tax return, restoring lost data). Parts of an otherwise regularly used product may be used intermittently (e.g. making a PDF, doing a mail-merge, changing the IP address). Often, the intermittent tasks are also critical to the user. Users can forget how they used the product last time (sometimes in a matter of hours) and may need to relearn it all over again. The interface can be designed specifically to remind the user so that he can pick up the paths again.

Assign priority in the following way:

- **Assign weightage 4-5** if your product has business-critical infrequent tasks (anything less frequent than once a week), and particularly if the product is targeted to low tech-savvy users.
- **Assign weightage 3** even if the users are tech savvy if the product is complex or very complex (such products often have some infrequent tasks).
- **Assign weightage 0** if the product is one-time use, or if the product has no critical, but infrequent tasks (e.g. most information-only web sites would be accessed only once).
- **Assign weightage 1-2** in most other cases.

Ideas for evaluating this goal parameter:

- Teach the users how to do the task. Ask the user to repeat the task after a gap of hours / days / weeks. Look for elements that users have forgotten and need to be re-learned.
- If the product is to be used less frequently than once a month, test first-time usability more thoroughly. Include time to learn in the task completion time.
- During a review, look for memory clues and elements that might be confused with each other. These problems are hard to spot in a review.

Speed of use

8. *User must be able to do primary task at all times*

Add a computer to something, and chances are you will mess it up. Older phones could be cut off and stowed away just by putting them down, now we need to disconnect and lock the keypad. Computers allow us to add many cool features to products, but we don't want to do this at the cost of the primary or the frequent task. While watching TV, one should be able to switch channels and change the volume

in one click, not by navigating a menu. The camera can't take 5 minutes to boot up because it is loading 30 features that I am don't need right now.

Assign priority in the following way:

- **Assign weightage 3-5** if your product has one or two primary or frequent tasks, particularly if the tasks are currently already being done quickly. If a product is supposed to be used continuously, its most frequent tasks must be the quickest.
- **Assign weightage 0-1** if your product is being used very infrequently (once a year), and where speed of use is not critical.
- **Assign weightage 2** in most other cases.

Ideas for evaluating this goal parameter:

- In a field deployment, look for primary and frequent tasks, and investigate if users take too long to do them or find them difficult to complete.
- It is difficult to evaluate this goal in a lab context unless the frequent tasks are already known. In that case, just look for speed of use of those tasks.
- In a review, identify frequent tasks and evaluate if users are likely to take a long time or find difficult to do. If the product has a primary task, make sure that it can be done at all times.

9. *User should be able to navigate quickly and easily*

Navigation refers to the mechanisms that allow the user to move from one part of the product to another. Typical navigation mechanisms on the web are left-, top- or bottom-navigation, menu-based navigation and in-line links. Sometimes these elements become unnecessarily clunky – sub-menus take too long to pop-out, and hide off unnecessarily before the user is done. This can be a minor pest in infrequent tasks, but can get on ones nerves if one needs to use them frequently.

Assign priority in the following way:

- **Assign weightage 4-5** if the product needs to be used more than once a day
- **Assign weightage 1-2** for products with few screens or in games where navigation has been deliberately slowed down. Products that have no menus or screens to navigate to can even have 0 weightage.
- **Assign weightage 3** in most other cases.

Ideas for evaluating this goal parameter:

- Observe if the users face any difficulty while navigating from one screen to another, while doing benchmark tasks.
- During a review evaluate if any navigation takes too many steps or if the interface is clunky in its response.
- Compare multiple navigation options by using GOMS analysis.

10. *Product should not load user's memory / put cognitive load on user*

Human beings can hold very limited number of items in the short-term memory (7+/- 2 items). Any time the product asks the user to input arbitrary information (such as PNR numbers, PAN numbers or product activation codes) it taxes the user's short term memory, even when such information is handy. If the user needs to pick out information from a cluttered screen (e.g. find the highest value in a randomly ordered list) it adds to his cognitive load. If the user needs to keep track of information that is changing too fast, or if the user is supposed to finish a task in a limited amount of time, this can add to the cognitive load.

Assign priority in the following way:

- **Assign weightage 3-5** if the product is a frequent use application or if the product needs to be used in an attention deficit situation (e.g. while driving a car or while giving a lecture).
- **Assign weightage 0-2** if the product is simple and is not likely to require too much attention, if it is a casual use product such as socialising or entertainment or if the product is to be used infrequently in a stress-free environment.

Ideas for evaluating this goal parameter:

- During a think-aloud test, probe hesitations. Keep an eye on times where user stops articulating thoughts to find if there was an additional cognitive load on the user.

- During a performance test, look for tasks where user needs to memorise things, where user prefers to write things down, or where users miss information that was presented.
- During a review, look for things that are likely to load the user's short-term memory or long-term memory or points where important information is cluttered or not well-communicated.

11. Flexibility

User should control the sequence of tasks, not the computer – particularly if the user is an expert, tech-savvy user using the product frequently. On the other hand, too much flexibility will overwhelm a novice user – a step-by-step wizard is a typical interface where the novice is happy to relinquish control to improve upon the ease of use.

Assign priority in the following way:

- **Assign weightage 3-4** if the product needs to be used frequently by tech-savvy, expert or niche market users. Products with life-critical, safety-critical or business-critical tasks also tend to get higher rating. Rarely will you assign a 5 on this goal parameter, unless you are designing for geeks.
- **Assign weightage 0-2** if it is a simple product, a casual use product or a product to be used by low tech-savvy users.

Ideas for evaluating this goal parameter:

- Do think-aloud tests with users having varying needs. Probe to see if different users might have preferred another sequence than the one dictated by the product.
- During a review, go through the tasks playing roles of different personas and investigate if the product is forcing sequence of tasks that may be inappropriate.

12. User should be able to complete tasks quickly

Steve Jobs reportedly told his engineers – “We plan to sell 20 million Macintoshes. Each Macintosh will boot 2,000 times. If you reduce the boot up time of the Macintosh by one second, you will save 40 billion seconds – that is 1,268 years or about 21 lifetimes. How hard will you work to save 21 lives?” We always have an idea about how long an activity should take. A web page should download in 15 seconds. An ATM can't take 10 minutes to complete one transaction. Typing must be faster than writing on paper. The most frequent tasks must take the least amount of time, number of clicks or efforts. In some products there might be critical tasks that must be done quickly.

Assign priority in the following way:

- **Assign weightage 5** if your product is a continuous use products with few, repetitive tasks (e.g. ticket counter operator or an ATM)
- **Assign at least 3-4** if your product's main promise is that it saves time. Products with frequent or repetitive tasks should also get a high priority.
- **Assign weightage 0-2** for most other products. It tends to be on the lower side if the user doesn't care about saving time in the context of this product (e.g. while playing a game).

Ideas for evaluating this goal parameter:

- In a performance test, measure time of completion of tasks. It is typical to benchmark speed of use against competitive products or previous version of the same product.
- In a review, look for number of steps involved, and whether each step is taking the user closer to achieving his goal. For more detailed analysis, use GOMS.

13. Product should be personalised for the user automatically

Gmail remembers all email addresses you ever typed and lists them by the frequency of use rather than alphabetically. Chrome automatically lists the most frequently visited 9 web pages on a blank page. PhotoShop remembers in which corner of your screen you left your tools last. New Nokia phones automatically add all entries from the phonebook into the T9 dictionary. Some TV models automatically remember the volume setting of each channel. Does your product automatically personalise itself to the user's individual needs?

Assign priority in the following way:

- **Assign weightage 3-4** if your product is targeted to a wide or mass market and if you expect different users to have different usage patterns and particularly if the product is to be used several

times. Rarely will you assign a 5 on this goal parameter, unless the product is about personalised service.

- **Assign weightage 0-1** if you don't expect differences in usage across users. If your product is to be used only once or it has no possibility of personalisation this goal will be irrelevant.
- **Assign weightage 2** in most other cases.

Ideas for evaluating this goal parameter:

- In a think-aloud test, ask users to do several tasks in different scenarios. Probe actions that the user does repeatedly to identify opportunities for improvement. Look for information or settings that the user needs to supply repeatedly (e.g. language setting on the ATM, address on an e-commerce web site).
- In a field deployment, probe contextually to detect opportunities for personalisation.
- In a review, invite domain experts and representative users. Explicitly look for opportunities for personalisation that have been missed out.

14. Product should be localised for specific market segments

Imagine selling an English-only product in the Japanese market (all the sales will be imaginary). Imagine launching a calendar tool in India without marking Diwali holidays. Or imagine selling the same version for doctors and plumbers. Products must be localised for specific groups – geographical, socio-cultural or professional. Typically, localisation of many products is limited to language translation of menus (and often, the translations are quite poor). But localisation needs to go far beyond translation. Currencies and calendar holidays are obvious starting points. Icons, metaphors and aesthetics need subtler considerations from one culture to another. So are social aspects (such as privacy expectations) or professional interests.

Assign priority in the following way:

- **Assign weightage 3-5** if there are wide differences in usage across user segments within the target audience, but individual users within segments behave similarly. Mass- or wide-market web-based products and business critical products often require localisation.
- **Assign weightage 0-1** if usage of products is expected to be quite similar across user segments – this could happen in internal applications for trained staff or thick domain applications to be used by experts.
- **Assign weightage 2** in most other cases.

Ideas for evaluating this goal parameter:

- In a field deployment contextually probe to detect opportunities for localisation. Look for differences in usage (e.g. one user group uses one feature repeatedly, while the other one doesn't) and probe for reasons.
- Do a regular usability test with multiple user groups to discover localisation opportunities.
- In a review, look for opportunities for localisation that have been missed out. Invite diverse, knowledgeable reviewers – make sure all user groups of interest are represented.

15. User should be able to customise the product for himself

It is important to start by saying that in most situations, most users have no interest in customising *your* product. To customise a product, the user needs to form a conceptual model of how the product works and a majority of users don't do that for a majority of products. Only frequent, tech-savvy users attempt to customise a product after they have become competent performers. Among these, many do only superficial customisation (e.g. changing a wall-paper or a ring tone). A few do basic functional customisation (e.g. setting up shortcuts on the desktop, defining style sheets or changing the layout of the dashboard). And rare few do deep down customisation.

Assign priority in the following way:

- **Assign weightage between 2-4** if the product is complex, and is supposed to be frequently used by tech-savvy users. Rarely, if ever, would you assign a 5 for this goal parameter.
- **Assign weightage of 2** if the product is supposed to be frequently but is either not complex or it is supposed to be used by non-tech savvy users.
- **Assign weightage 0-1** in most other cases.

Ideas for evaluating this goal parameter:

- Deploy an early version of the product with some tech-savvy users for a while and after they have become competent performers, interview them while contextually using the product to ensure that all opportunities for customisation have been exploited. Also ensure that unused customisation features don't come in the way of other operation.
- In a think-aloud test recruit competent performers. Give them customisation tasks to suit their own needs and probe confusions about the conceptual model clarity.
- In a review, invite competent performers on older versions or competing products to participate. Look for opportunities for customisation that have been missed out. Also ensure that unused customisation features don't come in the way of other operation.

Ease of use

16. Interface should clearly communicate the conceptual model

While a majority of users normally don't put in the effort to create a consistent conceptual model, they need to have it to troubleshoot problems or to plan a complex series of tasks. The one thing the product's interface should surely not do is communicate the wrong conceptual model. It does sound like an "apple pie and motherhood" statement, but many usability problems are found related to confusing interfaces.

Assign priority in the following way:

- **Assign weightage 3-5** for mass and wide market products and products targeted to low tech-savvy niche markets.
- **Assign weightage of 1-2** only if the product is an internal application, the users are moderately tech-savvy and there is a lot of training planned for.

Ideas for evaluating this goal parameter:

- A think-aloud test is the best way to find confusions related to the conceptual model. During the test, find out whether users can recover from errors and solve problems.
- During a performance test, find out how many users can complete tasks successfully, with or without help. Count errors caused by conceptual model problems.
- In a review, invite experienced interaction designers and usability specialists. Look for potential miscommunication of the conceptual model.

17. Intuitiveness: user should be able to predict the next step

Users approach a product with some goals. Intuitive products anticipate users goals and provide an appropriate interface. With an intuitive product, users can easily predict what to do next, why to do it and how to do it.

Assign priority in the following way:

- **Assign weightage 3-5** if the product is targeted to low tech-savvy users. If the product is business critical and / or complex then assign weightage 3-5 even for medium tech-savvy users.
- **Assign weightage 2** in simple products or medium complexity products targeted to tech-savvy users. Generally, this goal parameter is not assigned a weightage of less than 2.

Ideas for evaluating this goal parameter:

- Like conceptual model clarity, think aloud test is the best way to evaluate intuitiveness. At each step, probe users about their expectation of the next step, why they think it should be the next step and how they would do it. Look for confusions / misunderstanding.
- In a review, invite experienced interaction designers and usability specialists. Look for steps that are not intuitive or are difficult to predict.

18. No entry barrier: user must be able to complete critical first tasks

If the user can't start using the product, he may not end up using it ever. An entry barrier is the crucial first step in product usage that prevents users from getting started. Some entry barriers are related to

infrastructure (e.g. dependence on a particular browser or Flash version, having a particular type of mobile phone etc.). Other entry barriers are related to the procedure (e.g. long procedure to get an ATM card or the election card). Yet other entry barriers are plain old usability problems (e.g. forgot PIN, can't navigate beyond the first menu of the set top box to select a TV channel, didn't know how to use a touch screen, site requires to create an account before the user can check out airfare).

Assign priority in the following way:

- **Assign weightage 3-5** if the users have a choice of not using your product (which includes most mass- and wide-market products with moderate or more complexity)
- **Assign weightage 0-1** if the product is being used in a controlled environment, where infrastructural and procedural issues don't matter (e.g. a call centre) and by trained staff (so usability issues matter less).
- **Assign weightage 2** most other cases.

Ideas for evaluating this goal parameter:

- It is easiest to locate entry barriers in the field. In contextual interviews with potential users who don't use your product, investigate if there are any entry barriers that prevent them.
- After an early version of the product is deployed with a set of users, investigate why users choose not to use the product.
- In a review, invite designers and usability specialists with experience in similar products. Compare the product with known entry barriers of other products of the same type.

19. Product should require no unnecessary tasks

Though obviously not desirable, unnecessary tasks do slip in. Intranets ask their users to log in several times – each time in a different sub-system. Airlines remind users of the web check-in rules after the user has input the PNR. Dialog boxes ask users to first click Apply, then click OK. Unnecessary tasks are particularly undesirable when they hamper work frequently.

Assign priority in the following way:

- **Assign weightage 4-5** if the product is to be used frequently.
- **Assign weightage 0-1** rarely, if the product is used very infrequently for casual tasks.
- **Assign weightage 2-3** for most other products.

Ideas for evaluating this goal parameter:

- After an early version of the product is deployed, evaluate in a contextual study whether any tasks are unnecessary.
- In an inspection look for any unnecessary steps. In a more rigorous review, model task as a sequence diagram and write user intents for each step. Alternately, write the task as an essential use case and compare it with actual use case. Inspect user tasks that have no underlying user intents.

20. Product should automate routine tasks / minimise user task load

Machines are good at doing repetitive tasks while humans find them drudgery. In some cases, automation is the stated, high-level purpose (e.g. office automation, factory automation or an automatic washing machine). In other cases, automation happens more subtly (e.g. autocorrect as you type, automatic alarm that wakes you up). Automation involves the risk of delegation – automate too much and the user may lose the feeling of control (remember Microsoft's paperclip?).

Assign priority in the following way:

- **Assign weightage 4-5** if the product involves high-frequency use and has many routine tasks.
- **Assign weightage 2-3** if the product involves medium-frequency use and has routine tasks.
- **Assign weightage 0-1** for products that don't involve a routine task. This goal parameter is not much relevant to information oriented websites, one-time use applications and casual use applications.

Ideas for evaluating this goal parameter:

- In a contextual interview investigate if there are any opportunities for automation of the routine tasks that are performed by the users today.
- After an early version of the product is deployed, observe early users in the field and investigate if any tasks need to be done routinely.

- In a review, look for tasks that might end up being done routinely (with or without the product) and can be potentially automated.

21. *Product should be always on, always accessible*

This is crucial for some life-critical products – the pacemaker must be always on, so must be the oxygen supply in an ICU and the signal system in the railways. Business critical products too need to be always on, always accessible. If an airline website is not working for a day, the planes still need to take off but with fewer passengers. Similarly, for a taxi-driver, the mobile phone has become business-critical. Extending accessibility of the product may involve providing an extra battery pack, emergency talk-time when minutes run out or synchronising the same calendar on multiple devices seamlessly.

Assign priority in the following way:

- **Assign weightage 5** for life-critical products or products that affect lives of millions of people in some way.
- **Assign weightage 3-4** for frequent use business-critical products and very popular websites.
- **Assign weightage 0-1** for entertainment or casual use products.
- **Assign weightage 2** when in doubt.

Ideas for evaluating this goal parameter:

- After a field deployment of the product, contextually interview users to investigate if the product was needed but was not accessible.
- In a review, break down tasks at a minute level and look for occasions when the product might not be on or accessible.

Ease of Communication

22. *Information architecture*

Information should be well aggregated, categorised and presented. Information architecture is very important in information oriented products, particularly if large amount of information needs to be organised. The information architecture should reflect the thought-process or goals of the user (e.g. users look for birthday cakes and birthday candles in the same rack, a prospective student wants to choose a discipline in which to study at the university) or structures in the real world (e.g. business destinations, holiday destinations, places of pilgrimage) rather than internal organisation of code or structure of the organisation represented (e.g. visa department, foreign exchange department, train ticket department, air ticket department, hotel department etc.).

Assign priority in the following way:

- **Assign weightage 5** if your product is a complex information product targeted to wide markets (e.g. websites of a large organisations, intranets with many features, large ecommerce websites)
- **Assign weightage 4-5** for large learning domain products with many choices (e.g. learning management systems, encyclopaedia), business-critical and goal-oriented products
- **Assign weightage of at least 3** for most other products. Rarely will the weightage for this parameter be below 3.

Ideas for evaluating this goal parameter:

- Do a reverse card-sort and see if users classify information in the same way as the product.
- During a think-aloud test, probe for confusions, particularly if users are lost or if users look for data in the 'wrong' place.
- During a performance test, find out how many users can locate data, with and without help. Count errors induced due to information architecture problems.
- In a review, invite domain experts. Look for potential information architecture problems.

23. *Communication should be clear*

The text should be well-written, the graphics should be clear. Well-organised information architecture helps users reach the right page, but once there, user should easily understand the content and make his

decisions. The shopper should choose his products; the prospective student and the tourist should be able to make up their mind; the learner should understand the concepts.

Assign priority in the following way:

- **Assign weightage 4-5** for business critical products, goal-oriented products, low frequency usage products and to products targeted to low tech-savvy users. Higher weightage should go to a combination of criticality of the task and reduced attention span or low education.
- **Assign weightage 2-3** for all other products

Ideas for evaluating this goal parameter:

- During a think-aloud test, probe for miscommunications of text and visuals. Probe to see if users are able to make 'correct' decisions.
- In a review, invite domain experts. Look for potential miscommunication of information.

Error-free Use

24. Product should give good feedback / display its current status

Giving appropriate feedback solves half the usability problems. At all times, users must know where they are, what they have been doing and what options do they have. We all hate waiting, but wait cursors, rotating circles and percentage bars keep us pacified and sometimes tell us how long must we wait. Users are disturbed all the time (in fact assume that users want to pay attention to your product for as little time as possible). A modal dialog box is like a rude interruption – feedback should be calm, and draw attention to itself when the house is on fire, or equivalent. Text, visuals, audio, touch all can be used for giving feedback. Over time, good feedback helps the users build a conceptual model.

Assign priority in the following way:

- **Assign weightage 3-5** for goal-oriented, business-critical and / or learning products
- **Assign weightage of at least 2** for all other products.

Ideas for evaluating this goal parameter:

- During a think-aloud test, probe to find if users notice the feedback, understand it, can tell the current status correctly. In case of errors, observe if users notice the error and can decide the next course.
- In a review, look for potential feedback, error messages and status display problems.

25. Product should not induce errors

No one designs a product to induce errors, but design flaws slip in. Look at the Jet Airways booking page below as an example. If you have not already logged in as a frequent flier member, the site gives you an opportunity to do so just after selecting flights. One thing that many users are used to doing after they enter their user ID and password is to click on the button below the fields. In this case, if you click on the button below the fields, it selects "Go Back" (which is the same as cancel) and throws the user back to the airline home page. The error can be easily fixed by a slight change in the layout (the more recent version below). Frankly, the airline doesn't need a Go Back button. All browsers come pre-installed with it. The Go Back button just induces an error unnecessarily. Non-tech savvy users are particularly susceptible to such errors.

The screenshot shows a login form for Jet Airways. At the top, there is a small line of text: "Itinerary. Additional taxes may apply based on your JetPrivilege Tier, cabin/class flown or promotions." Below this is a link for "More information." The main heading is "Login as a JetPrivilege member or continue as a Guest user". There are two radio buttons: "Login as JetPrivilege Member" (selected) and "Continue as Guest". Under the "Login as JetPrivilege Member" option, there are fields for "Membership No" and "Password", with a "Go Back" button below them. Under the "Continue as Guest" option, there are links for "Sign Up Now" and "Benefits of Signing up", with a "Continue" button below them. The "Go Back" button is positioned directly below the password field, which is a common point of user error.

Lounge access is not available for guests flying on Jet Airways Connect and JetLite codeshare flights.

[More information.](#)

Login as a JetPrivilege member or continue as a guest user

Login as JetPrivilege Member
 Membership No: Password: I am travelling

OR

Continue as guest
 Not a JetPrivilege Member?
[Sign Up Now](#) [Benefits of Signing up](#)

Assign priority in the following way:

- **Assign weightage 3-5** if the users of your product are not very tech savvy or if the product involves life-critical, business-critical or goal-oriented tasks.
- **Assign weightage of at least 2** in most other cases.

Ideas for evaluating this goal parameter:

- During a usability test, ask users to perform typical tasks and observe the errors commonly made by users – see if any errors are induced by the design and seek out alternative designs that will avoid these errors.
- In a review, invite designers and usability specialists with experience on a similar platform. Look for potential errors that could be induced because of the design.

26. Product should prevent users from making errors / tolerate errors

Instead of inducing errors, it will be nice to prevent errors for a change. Instead of saying “users make errors” if we say “users do tasks by imperfect approximation”, that changes our attitude towards errors. If an error is possible, someone will make it. I can withdraw an amount less than Rs 50,000 or my bank balance (whichever is less) from an ATM at a time. But the ATM interface allows me to type in Rs. 50,00,00,000 (it is fun – try it next time you visit the ATM, you might get lucky). It also allows me to type in Rs. 503 or Rs. 550 but it will not dispense these amounts. These errors could have been easily prevented.

When it is not possible to prevent errors, try to tolerate user errors. When we mistype a search query, Google nicely asks us “Did you mean *isosceles*?”. If the user feels nice to type commas in large amounts, allow him and then just ignore them. But avoid giving a stern warning like the one below (quickly now, what’s the Contingency budget?).

Budget Breakup		
Please enter the amount wherever applicable. In case of no Cost is involved, please write remarks in the 'Budget Remarks' column given below the Budget Breakup		
Please don't enter ','(comma), '.'(dot) while entering amount.		
SrNo	Budget Head	Amount
1.	Consumables	2,00,00,000
2.	Equipments	2,00,000
3.	Contingency	200000000
4.	TA / DA	200

Assign priority in the following way:

- **Assign weightage 3-5** if the users of your product are not very tech savvy or if the product involves life-critical, business-critical or goal-oriented tasks.
- **Assign weightage 2** in most other cases.

Ideas for evaluating this goal parameter:

- During a usability test, ask users to perform typical tasks and observe the errors commonly made by users and seek out alternative designs that will prevent these errors.
- In a review, invite designers and usability specialists with experience on a similar platform. Look for potential errors that could be prevented.

27. *Product should help user recover from errors*

In spite of best design effort, users will make errors sometimes as they perform tasks. A good product helps users recover from errors. First users need to recognise that an error has happened, that something happened that was not the user's goal. Next, the user needs help to troubleshoot the cause of the error condition and an easy method to recover from the situation. Computers have given us a big, useful word – Undo. It is something that allows us to explore the cyberspace, in the security of the knowledge that we can always retrace our steps.

Assign priority in the following way:

- **Assign weightage 3-5** if the users of your product are not very tech savvy or if the product involves life-critical, business-critical or goal-oriented tasks.
- **Assign weightage 0-1** if the product does not involve many tasks (e.g. an informative web site).
- **Assign weightage 2** in all other cases.

Ideas for evaluating this goal parameter:

- During a think-aloud test, probe into the process of error recovery to identify if the product is actually helping the user in error recovery.
- During a performance test, count the percentage of users who are able to recover from errors, and the percentage of errors they can recover from.
- In a review, look at error recovery paths and analyse if they fit all users intents.

Subjective Satisfaction

28. *User should feel in control of the product / behavioural appeal*

It is a joy to cut vegetables with a well-balanced knife or to cook your favourite breakfast. It is a joy to write on a nice white paper with a smooth ink pen. It is a joy to drive a well-maintained car that responds to your every manoeuvre on a smooth road with no traffic. Some products feel nice, smooth reliable – other products feel clunky, scratchy, unreliable. Norman calls this the behavioural appeal of the product.

Assign priority in the following way:

- **Assign weightage 3-4** if yours is a task-oriented product. If it is meant to be used frequently, for a long period of time or a product meant to be used by low-tech savvy users, the weightage tends to be on the higher side. In rare cases, you might consider a 5.
- **Assign weightage of 2** in most other cases.

Ideas for evaluating this goal parameter:

- During a usability test observe / after a usability test probe to find out if the user felt a loss of control at some stage while using the product.
- At the end of a test, ask the user to rate the sense of control in comparison with other products.
- In a review, look for potential elements of the design where user may feel a loss of control.

29. *User should feel emotionally engaged / reflective appeal*

Every once in a while we come across a product that we get emotionally attached to. Usually the reason is not material in the product, but something we associate with the product. It could be your grandfather's pen or the first birthday gift from your boyfriend. Sometimes it's the association of the good fun you had with the product (usually by sharing it with someone). Sometimes, it is not one person, but a group (e.g. social networking sites) or a country (usually your own). Sometimes, it is about yourself (the bat with which I scored my first century). Sometimes, it is the brand association (why else would you drink brown water that does you no good and damages your teeth?).

Assign priority in the following way:

- **Assign weightage 4-5** if your product is a casual, gaming or entertainment product (music players, cameras, game consoles, social networking sites, brand sites)
- **Assign weightage 3** if your product is business-critical, goal-oriented or if there is a need to motivate the user to use the product.

- **Assign weightage 0-2** if it is an internal application, an application for which the user does not pay personally and an application where user has no choice but to use the product (so mean).

Ideas for evaluating this goal parameter:

- After a usability test / field deployment, survey the users about their emotional engagement, enjoyment, brand appeal etc. Ask them if it was a product they would feel proud to own / be a part of / be seen with. Ask them to benchmark their answers against other products with which they do feel emotionally engaged.
- Review the product with professionals experienced in branding and emotional engagement for the targeted audience.

30. User should find the product aesthetically appealing / visceral appeal

Each person may have a different notion of what is beautiful and what is not. Sometimes beauty is raw, raunchy, sexy. At others it is subtle, graceful, delicate, elegant, dignified. But everyone loves beautiful things. Each time you go to a shop to buy a dress, you try to buy the one that looks the best. Visceral appeal is the most immediate, first reaction when one sees, hears, smells, feels or tastes something – other considerations come later.

Assign priority in the following way:

- **Assign weightage 4-5** for premium products, but also for free to use, wide-market consumer facing web sites for brands, socialising or entertainment.
- **Assign weightage 2-3** for frequently used internal applications, niche market applications or task-oriented applications.
- **Assign weightage 0-1** if your product is invisible, or if the user has no choice but to use the product (mean again).

Ideas for evaluating this goal parameter:

- After a usability test / field deployment, survey the users with questions about the aesthetic appeal of the product. Ask them to benchmark it against a products that suits their aesthetic taste.
- Review the product aesthetics with artists, designers and critiques.

This tool is prepared by Anirudha Joshi, IIT Bombay. It is continuously under improvement. A paper describing this tool has been accepted for the 4th Workshop on Software and Usability Engineering Cross-pollination: Usability Evaluation of Advanced Interfaces (EVAL 2009), Uppsala, Sweden in conjunction with INTERACT 2009. <http://www.interact2009.org/?q=node/55>

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