# Ink - A Social Network for Writers

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Most social (or professional) networks available for Authors and Writers out there today are still web applications that are based on outdated web standards and design principles that are no more in use today, given the rise of Web 2.0 which includes use of AJAX and other potent scripting languages. More importantly, these old networks, which are more or less, overqualified forums, have the functionality that is required of these applications. However, what they lack is the ability to attract more users (writers, in this case), to their web applications, who would actually enjoy frequenting these websites. The problem they essentially pose is poor interaction techniques, and poor design, which oftens can leave the writers confused as to where to go for a certain functionality to be used. Moreover, these forums do not have the ability to send private messages where the writers can speak more freely to somebody. These forums also do not have the ability to let the writers showcase their work without needing the viewer to leave the website they are on, i.e., these forums will usually lead to other commercial websites where the viewer can only read an excerpt, and is later required to purchase the writer's work online or have it delivered to them in paperback (depends on the writer's M.O. for publicizing their work). All of these problems cannot be solved by regular blogging websites (partially, yes; but one should be able to do all of these things inside the same application).

Ink is designed to at least confront these interaction design problems, which if resolved, might lead to a purer and more enriched experience for the writers. Ink combines the perks of a professional network with those of a social media platform - like any blogging website. Adding to this the ability to directly communicate with people, Ink becomes a wholesome package which enables a writer to develop a footprint in the world of literary professionals. They can set themselves up professionally, and socially as well, with the help of Ink.

## System Walkthrough

The System underneath the interface lets its users perform the following tasks which might lead to them achieving what they were looking for. These functions are the basic abilities present on any social/professional network for users. These functions have been researched and refined by people specializing in Interaction Design, and Usability Testing. As a result of the firm base to the model used for selecting the options on a Social Network, those options were left unchanged for Ink. There were a few minor customizations pertaining to the special functions included in the System, i.e., the Portal option that allows a user (writer) to get themselves a job in freelancing writing, or anything more serious that allows their talent to be noticed.

The registration process for a new user is broken down into 4 basic steps, where they get to setup their account by providing information as shown below:

**Step 1**. Provide First, Last Names; provide a valid email address.

**Step 2**. Check your inbox for an activation code which can be used to create an account with the details provided in the first step.

**Step 3**. Select a unique Username and a secure Password.

**Step 4**. Select the topics of interest (this is used to tailor the feed accordingly, such that it is never cluttered or polluted with unwanted content).

**Register in just 4 steps!**

**Two**

We've sent you a code for verification. Please check your mail

code

Back «    Next »

**Register in just 4 steps!**

**Three**

username

password

Back «    Next »

**Register in just 4 steps!**

**One**

First Name

Only alphabets allowed

Last Name

Only alphabets allowed

Email

example:abc@example.com

Next >>

**Register in just 4 steps!**

**Four**

Tell us your interests!

☐ Art ☐ Books ☐ Business
☐ Culture ☐ Design ☐ Education
☐ Entertainment ☐ Fashion ☐ Fiction
☐ Food ☐ God ☐ Travel
☐ History ☐ Humour ☐ Life
☐ Lifestyle ☐ Movies ☐ Music
☐ News ☐ People ☐ Philosophy

Back «    Register!

Give us

Or if the user is already a member, he can directly login.

Now that the registration of the user is complete, they are free to go ahead and begin using Ink. The system logs the user into the ecosystem by default at the Homepage, which is a common design model used for most social/professional networks found online. The advantage of using this model is that the user will not need to put any extra effort into accessing any information stacked away in any part of the system.
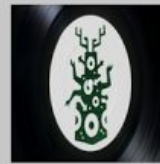
# Feed

## Once upon a time

*A philosophy **professor** stood before his class with some items on the table in front of him. When the class began, wordlessly he picked up a very large and empty mayonnaise jar..*
@Chintan Panchamia
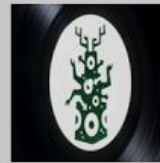posted on 0000-00-00 00:00:00

**Read »**

## Once upon a time

*A philosophy **professor** stood before his class with some items on the table in front of him. When the class began, wordlessly he picked up a very large and empty mayonnaise jar..*
@Chintan Panchamia
posted on 0000-00-00 00:00:00

**Read »**

## Twice upon a time

*Father was a hardworking man who delivered bread as a living to support his wife and three children. He spent all his evenings after work attending classes, hoping to improve himself so tha..*
@pratiksha
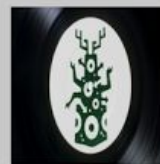posted on 0000-00-00 00:00:00

**Read »**

## Once upon a time

*A philosophy **professor** stood before his class with some items on the table in front of him. When the class began, wordlessly he picked up a very large and empty mayonnaise jar..*
@Chintan Panchamia
posted on 0000-00-00 00:00:00

**Read »**

The Homepage of the system is basically the article-feed, which shows articles published by the writers the user follows. The feed also involves featured articles which are deemed to be informative and elegant by more than the average number of readers accessing that particular article. (These featured articles aren't differentiated in the feed, in order to give the user an unprejudiced view of all the articles. So that they treat everything the same, thereby honestly rating every article they read). Thus, as a result they can view the Featured articles separately by selecting the appropriate option from the menu.
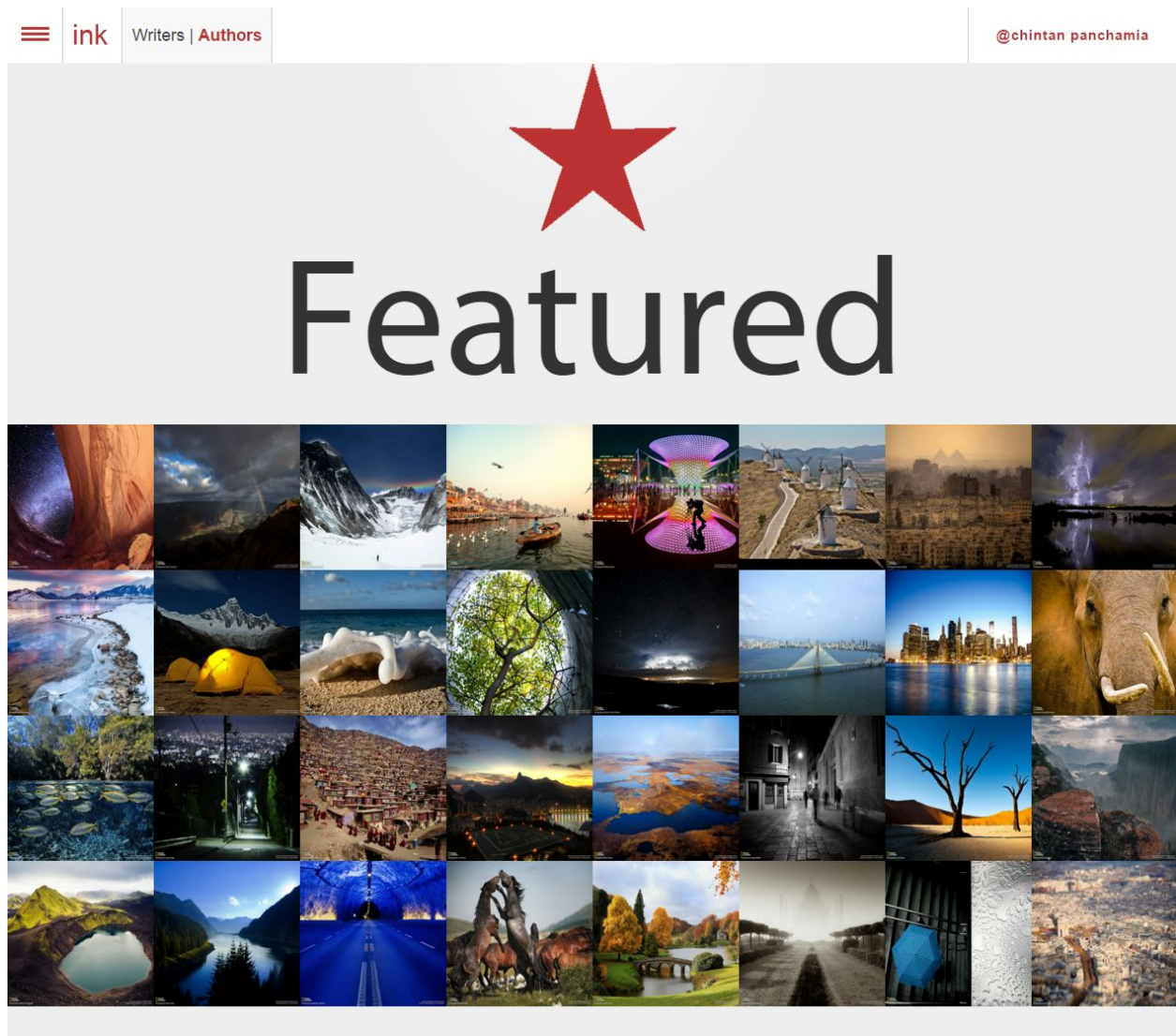


Apart from the Featured Article, the user can also create something that might one day become a part of the featured articles' list, i.e., Ink also allows for the users to write and save their work online, such that it is easily accessible to the concerned people. Ink combines the capabilities of a Blogging platform in this feature, by involving a fully functional text editor, which lets the user take down their work in proper writing such that they are allowed to format parts of it as they wish.

More commonly like most social/professional networks, Ink lets the user maintain a social profile which is visible to people following them or linked to them via the website. This profile has a photo of themselves that they think suits them best. It also has their username, along with a short bio, which is used to describe them. This profile allows them to put on display what they actually are on the inside, and what they believe in, as writers.

3 followers
4 following
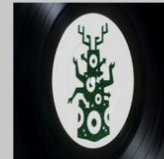
3 articles

FOLLOW  HIRE  CONTACT

## Once upon a time

*A philosophy **professor** stood before his class with some items on the table in front of him. When the class began, wordlessly he picked up a very large and empty mayonnaise jar..*

@Chintan Panchamia

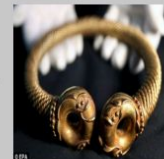posted on 0000-00-00 00:00:00

Read »

## Thrice upon a time

*One day, a poor boy who was selling goods from door to door to pay his way through school, found he had only one thin dime left, and he was hungry. He decided he would ask for a meal at th..*

@Chintan Panchamia

posted on 0000-00-00 00:00:00

Read »

## Stairway to heaven

*�Can I see my baby?� the happy new mother asked. When the bundle was nestled in her arms and she moved the fold of cloth to look upon his tiny face, she gasped. The doctor tur..*

@Chintan Panchamia

posted on 0000-00-00 00:00:00

Read »

Ink also provides a universal search mechanism, which allows the user to directly search for anything tied to the System, by using just the word they can recall at best. The search allows them input any keyword,

which is referenced against the system's databases to reveal any article, or a profile, or a recruiter who might have the keyword in their name, bio, or works.
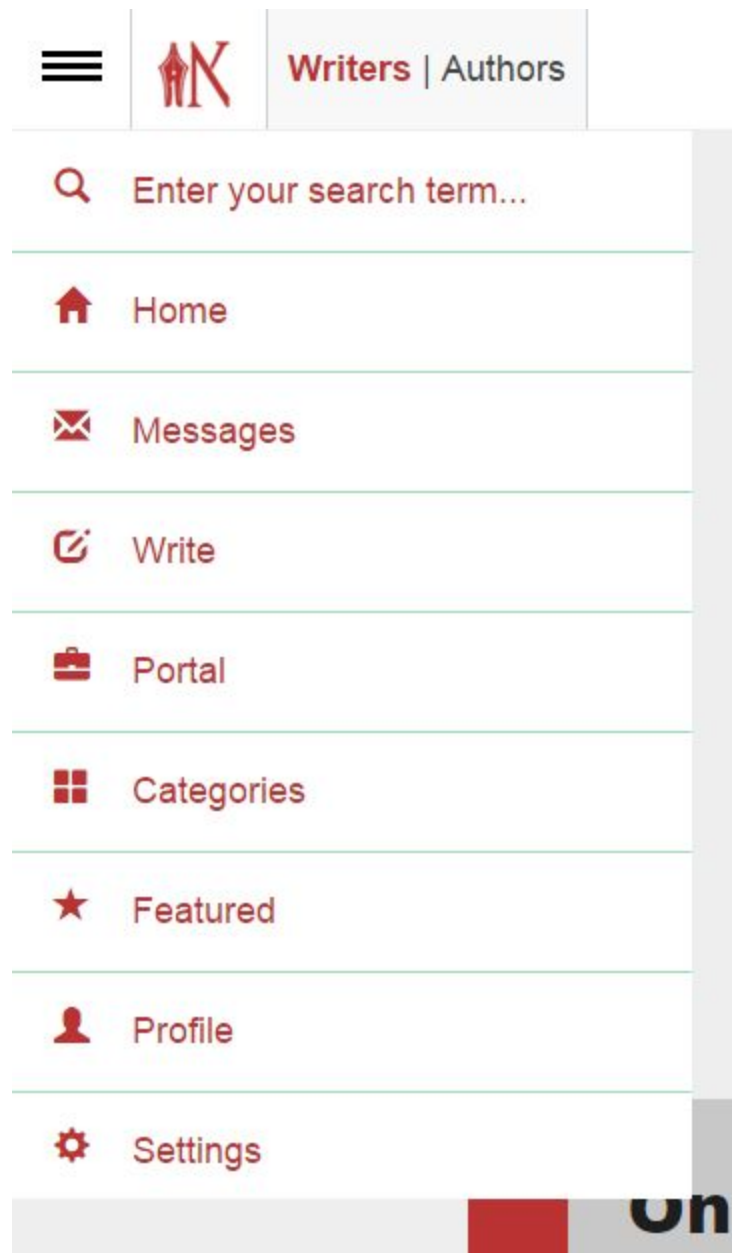


Like most common social/professional networks, Ink allows the user to privately send messages to any user on the network that they are connected to. This simplistic messaging technique may or may not substitute the static forum boards, where the messages to be sent privately are required to be sent into a private message board.

The user sometimes may wish to view their articles individually as a part of the category they fall under. Now these categories can be accessed in their sections when the user selects the Category option from the

menu, thereby selecting the view where they can directly enter a category and view the articles accordingly. They appear as elegantly designed tiles which can be observed for their category upon hovering the mouse pointer over the tile.
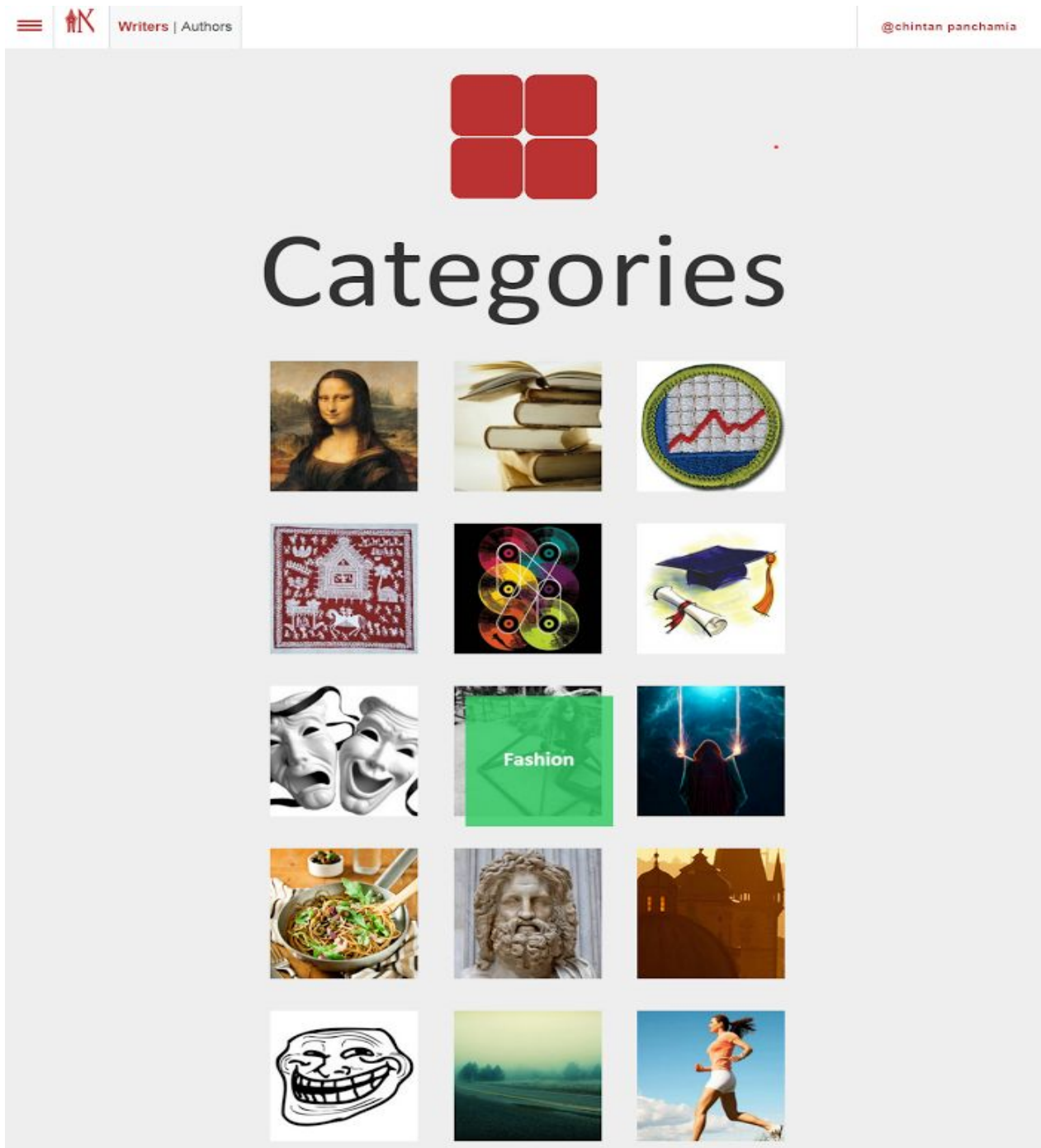


The settings page for this implementation of the system for Ink is quite simplistic, giving the user a chance to change their password and other simple details like their usernames. More functionality related to the User Interface of the system might be included in the settings with future iterations of the system.
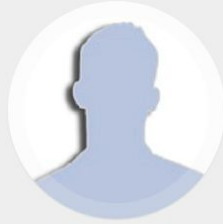
change your username

change your password

change your profile picture

change your bio

Finally coming down to the special feature exhibited by Ink, the user can look up hiring teams which need writers to join their team for creative/commercial purposes. The 'Portal' option in the menu of the system allows the user to look up possible job listings in this menu, and contact hiring teams that might be interested in the user's profile. Writers can get jobs as freelance writers or as full time writers with the hiring committee.

# Portal

? View Requests

! View Pending Deals

✔ View Accepted Deals

✗ View Rejected Deals

# Task Domain, Users, and Scenarios

Since this application is designed and built for writers of all sorts, one might consider that the primary task would be related to typing. However, this is not simply a desktop application that might be used for typing. It's primary purpose is to connect users who believe in the same things and like to write about the same. Thus the primary task domain of this application is not very different from that of any of the social networks found online. However, that doesn't mean that the task of typing is left out of the scope of the application. This is because Ink also provides the user with the ability to write articles and either publish them or store them as drafts/archives. Thus the primary task domain involves reading, looking up articles, looking for people, looking for jobs. This point can be used to clarify that the Keystroke model doesn't really help much in evaluating the effectiveness of the application.

The users involved with this application are, at any point of time, going to be mainly writers. However, people interested in viewing these writers' works and the people interested in utilizing their skills for their organizational benefits are also the type of users to be found using this application. The people who might not exactly try their hand at writing, but might simply like to read up on people's articles, will be in a fairly larger number than people looking to hire these writers. These users will engage with the application for purposes very similar to those of the writers, i.e., they too will use the website for viewing articles in their feed, and connecting to writers via direct messaging. They can maintain a profile as well, just like the writers. The only module they might not make any use of in the application would be the one involving writing and archiving/publishing their work.

There are a variety of scenarios for using Ink. They are follows:
- A writer looking to publish their work online, and let the world access their content for no charge.
- A writer looking to get the attention of certain organizations that are looking to hire writers for writing in columns or magazines.
- A writer looking to meet like-minded people in the same profession, and socialize with them.
- A writer looking to collaborate with another writer, to produce something new and creative.
- A regular user wanting to read articles and follow up on some of their favorite writers on Ink.
- A regular user looking to meet certain writers to get inspiration or even socialize with them.
- A hiring personnel from an organization looking for writers, might want to post a job advertisement on the website, which will appear in the feeds of the users.
- A hiring personnel from an organization might log into Ink to see who all have applied to the post and/or how many writers have already viewed the advertisement.

# Related Work, and Relevant Literature

The following are the papers that were referred in the process of designing this web-based application. These papers cater to the variety of topics concerned with designing an application that is high on design as well as functionality.

References:

- http://dl.acm.org/citation.cfm?id=2775478&CFID=733322230&CFTOKEN=87135634&preflayout=flat

  This paper deals with UX, and design for mobile devices just as extensively as for desktop-based devices. This paper got us acquainted with terms such as responsive design and mobility. It also introduced to us the concept of Smoke and Mirrors prototyping, and how it is always necessary to integrate front end and back end just as well into design in order to get an application that is consisted right from the demos to the actual version being deployed. This led us to choose Bootstrap-Twitter CSS suite for designing our website.

- http://dl.acm.org/citation.cfm?id=1531407.1531458&coll=DL&dl=GUIDE&CFID=717117662&CFTOKEN=43996777

  This paper deals with how Web 2.0 is taking over the world of website design by introducing game changing visual-aid technologies like HTML 5 and CSS 3, along with JavaScript and JQuery libraries that allow the designer to achieve more interactive design that responds better to the device it is currently being accessed on. Morevoer, AJAX, which is an extension of the JavaScript technology can be used to generate dynamic results while the user is still performing certain actions on the component. This helped us decide the technologies to be used for Ink as compared to the static HTML/PHP websites that are the writers' forums seen online.

- http://dl.acm.org/citation.cfm?id=1868955&CFID=733322230&CFTOKEN=87135634

  This paper helped us derive the common model that is the tried and tested social network application model which can be used to develop anything that is on the same line, i.e. Ink in this case. This paper helped us polish our UX knowledge required to design a functionally sound social/professional networking application.

- http://dl.acm.org/citation.cfm?id=2556288.2556977&coll=DL&dl=GUIDE&CFID=717117662&CFTOKEN=43996777

  This paper was referred for studying the dissemination of knowledge once a user on the social network has perceived it. This helped us decide how we wanted to lay down the information on our websites, in such a way that it would be easily perceptible and accessible to everybody without much effort as to where something might be found on the web application.

# System Design Decisions and Evolution

The design of this application began with the decision based on the domain of the same. Ink is basically an application designed for writers to connect to other like minded people or other hiring personnel that might wish to hire them for their talents. So, the model had to be similar to common social/professional networking websites like Facebook and LinkedIn. However, the idea was to introduce responsive design (which has its own drawbacks - cost, research and context). Thus, it had to look different than the current social networking websites found online. These websites incorporate good design for the functionality they provide. However, they don't incorporate the latest design standards into their designs as it is simply not possible or practical to upgrade the entire design of the system. However, this is not an issue with Ink which isn't as massive, and particularly deals with a more niche audience. Thus the idea of responsive design could be included into the list of to-do items for Ink.

Two people were interviewed thoroughly before beginning the design of this application. One being an undergraduate student of literature interested in Writing, here at North Carolina State University. And the other being a graduate Computer Science student at the same school. Their responses were recorded and studied and the similarities in their thinking processes were indicative of the fact that the current UX model for common social/professional networking sites is what most people using these sites prefer. Thus the decision to develop something on similar lines as far as the structure of the system was concerned.

Next, we came up with the first iteration of the system design. A paper/board prototype which was given to each of the students. Their reviews, this time around, however, weren't as similar as the last time. While the literature student was impressed with the design the CS student suggested that the structure was unnecessarily visually complex, and would serve the same purpose as a simple list structure but for five times the effort. These recommendations were once again taken into account, after which we came up with the second iteration which was simpler yet equally functional at the cost of a previously proposed ability - the ability for writers to check into certain places to meet up with other writers to discuss about a certain idea for collaboration, or just anything at all.

After having satisfied both the users with the second iteration, we went ahead with the implementation part of it. The technologies mainly used in building the system are JavaScript, HTML, CSS 3, and PHP. However, with the goal of introducing responsive design into the system we made use of the Twitter-Bootstrap CSS 3 API for building the visual style and accent of Ink. The decision to include Bootstrap and make good use of it, was an informed one. The primary reason behind it being Fitt's Law. Bootstrap makes use of flat design with minimalism. However, the one important thing about the design principles behind Bootstrap is that everything is quite visible and easily selectable for pointing/targeting, thereby reducing the need to worry about the ease in pointing and navigating through the system, on any device whatsoever.

The current iteration is actually an alternative that was considered for the design of Ink. The first iteration was originally thought of as the primary design of the application. However, given that HCI is driven by the needs of the user, we planned to stick to the second design as it garnered a relatively more positive feedback from either of the users.

All of our artifacts required for capturing the development life cycle of the application are attached separately in a zipped folder, which contains the user video, interview notes, prototype sketches, and card-sorted values.

# Evaluation

To evaluate the usability of our system, we conducted certain usability tests. In this we designed an empirical analysis experiment, wherein a certain script of actions was prepared for the user to follow. Moreover, we also asked the participants to answer certain survey questions before they began their script of actions. We monitored the users with utmost precision, so as to get the timings for the basest of their actions. We decided to use the **Keystroke-Level Model**, which would be ideal for the system, since it even still shall be mainly used on desktop systems.

Following are the pre-test survey questions put forth to them, along with their answers to the same.

**Pre Test Survey (User 1)**
1.  How important do you consider writing to be in your life?
    a.  not very important
    **b.  important**
    c.  extremely important
2.  How do you rate yourself as a writer
    a.  above average
    b.  average
    **c.  below average**
3.  How do you rate yourself as a reader
    a.  above average
    **b.  average**
    c.  below average
4.  Do you feel a need of a good platform to showcase your writing skills.
    a.  Always
    **b.  Sometimes**
    c.  Rarely (There are many blogs out there)
5.  What do you expect from an article-feed based website?
    **It Should be user friendly, accessible on all devices. Option to filter the feed. Should record preferences**
6.  Where would you look for a job online?
    **LinkedIn**

**Pre Test Survey (User 2)**
1.  How important do you consider writing to be in your life?
    a.  not very important
    b.  important
    **c.  extremely important**
2.  How do you rate yourself as a writer
    a.  above average
    **b.  average**
    c.  below average
3.  How do you rate yourself as a reader
    a.  above average
    **b.  average**
    c.  below average
4.  Do you feel a need of a good platform to showcase your writing skills.
    **a.  Always**
    b.  Sometimes

      c.   rarely (There are many blogs out there)
5. What do you expect from an article-feed based website?
   **It should be a good amalgamation of the sources it uses for deriving its feed. The articles, even under the same topic, must come from varied sources and diverse authors.**
6. Where would you look for a job online?
   **Most probably LinkedIn, or other job-search websites.**

The following are now the results of the post-test survey conducted on each of the users.
**Post Test survey (User 1)**
1. Things that you really liked about the system?
   **Hire feature**
2. Things that you didn't like about the system?
   **Could use better feedback**
3. Did the system meet your expectations?
   Definitely yes  --- 5  **4**  3  2  1 ---  Not at all
4. How do u rate the simplicity of system on scale of ?
   Simple  --- 5  **4**  3  2  1 --- Hard to understand
5. I think the system was consistent?
   Strongly Agree --- **5**  4  3  2  1 --- Strongly disagree
6. System gave me a good feedback about my tasks?
   very good --- 5  4  3  **2**  1 --- Not at all
7. Did you enjoy using the interface of the system
   Very Much --- 5  4  **3**  2  1 --- Not at all
8. Overall i am satisfied with the system
   Very Much --- 5  **4**  3  2  1 --- Not at all

**Post Test survey**
1. Things that you really liked about the system?
   **The flow of information, the UI**
2. Things that you didn't like about the system?
   **The design of the Portal for hiring**
3. Did the system meet your expectations?
   Definitely yes --- 5  **4**  3  2  1---  Not at all
4. How do u rate the simplicity of system on scale of ?
   Simple --- **5**  4  3  2  1 --- Hard to understand
5. I think the system was consistent?
   Strongly Agree --- 5  **4**  3  2  1 --- Strongly disagree
6. System gave me a good feedback about my tasks?
   very good --- 5  4  **3**  2  1 --- Not at all
7. Did you enjoy using the interface of the system

Very Much --- 5 **4** 3 2 1 --- Not at all
8. Overall i am satisfied with the system
   Very Much --- 5 **4** 3 2 1 --- Not at all

| Tasks | Predicted Time | Time taken by User 1 | Time taken by User 2 |
|---|---|---|---|
| 1.) SignUp | $24.16 + 2.55n$ ($n = 8$) = 44.56 | 50 | 80 |
| 2.) Write an article | $1.2 + 3.65n + 1.4 + 1.4 + 1.2 +$ indefinite amount in writing = $5.2 + 3.65n$ | 65 (with 5 words title and 2 line body) | 80 (with 5 words title and 2 line body) |
| 3.) Search for a article | $2.7 + 0.2n + 1.35$ ($n = 2$) = 4.45 | 5 | 6 |
| 4.) Hire an Author | $7.65 + 0.2n$ ($n=2$) = 8.05 | 8.10 | 20 |
| 5.) Logout | 1.2 | 2 | 3 |

The Keystroke-Level Model has several restrictions:
- It measures only one aspect of performance: time, which means execution time and not the time to acquire or learn a task.
- It considers only expert users. Generally, users differ regarding their knowledge and experience of different systems and tasks, motor skills and technical ability.
- It considers only routine unit tasks.
- The method has to be specified step by step.
- The execution of the method has to be error-free.
- The mental operator aggregates different mental operations and therefore cannot model a deeper representation of the user's mental operations. If this is crucial, a GOMS model has to be used (e.g. model K2)

Also, one should keep in mind when assessing a computer system that other aspects of performance (errors, learning, functionality, recall, concentration, fatigue, and acceptability), types of users (novice, casual) and non-routine tasks have to be considered as well. Furthermore, tasks which take more than a few minutes take several hours to model and a source of errors is forgetting operations. This implies that the KLM is best suited for short tasks with few operators. In addition, the KLM can not make a perfect prediction and has a root-mean-square error of 21%.

In our case, the second user (the writer) wasn't really a frequent computer person, Thus the sheer difference in their KLM model values.

Upon observing the users interact with our system, we have come to the conclusion that the current iteration of Ink holds true on the following heuristics of usability for User Interfaces, as put forth by **Nielsen.** They are, (derived from the answers to the questions on the survey)

**Visibility of System Status**: The system can evidently display information in a way that it is intuitively easy for the users to detect which system state they're currently using the web application in.

**Match between System and the Real world:** Ink makes use of the traditional terms used by most of the social networking applications, and in this case, also uses logos and imagery specifically designed for the terms and phrases used on the website.

**User Control and Freedom:** Ink allows its users to navigate through the application without any hinderances, as every option made visible to them is all of the functionality that's available to them. They can decide how they would like to use the system.

**Consistency and Standards:** Ink is consistent throughout the website in its design principles, and uses the same color scheme and typography throughout the application.

**Error Prevention:** As mentioned previously, the system only makes visible the options that are available to the user for operating on. Moreover it also provides appropriate feedback in most areas (and **not all**, as pointed out by the first user during the test), such that the user never does something they would have to take the pains to undo.

**Recognition rather than Recall:** Ink uses similar looking icons and very relatable metaphors throughout the system, such that the user may never get lost while navigating through the application, even for the first time.

# Conclusion

As a result of all the discovery-based activities, we were able to come up with a non-trivial implementation of the User Interface to our proposed system. This implementation was exhibited to the users who were consulted in the first place. Their reviews led to us revamping the User Interface, such that it came to become the second iteration of the system's design. This design was much lighter to use and had a new, more important functionality, at the cost of an innovative, yet niche functionality. In the end we succeeded in designing Ink as a Social/Professional Network for Writers of all sorts. However, the functionality that was swapped out for the newer one can definitely be implemented into this as a part of future functionality.

# References

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