E-Business Systems | EE3079
Assignment Documentation

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www.imagine-that.co.uk/deskhub

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Introduction

The main purpose behind this project was to allow us to select, develop and analyse a specific e-business model from all aspects. This includes all that it en-compasses in order for it to be run successfully. We therefore choose our business model to be an “E-mall” specializing in hot-desking. So what is hot-desking?

“It is a space-saving technique allowing multiple workers to use the same desk and/or computer; also, an office desk or computer available to whoever needs it; also written hot-desking” [1]

We will therefore be looking at the design and the structure of our business taking into account key areas of our selected e-business model such as the e-process, value chains and the incorporated technologies. We will also look at the strengths and weaknesses of our proposed model idea and from this draw our conclusions on how successful we feel the project was.

Why we are doing it

The area that we decided to work in was Hot Desking. The reason for looking into this e-business sector is down to it being an emerging business type and we feel through our research that there is a gap in the market that we are keen to exploit.

Background of hot-desking

The term Hot Desking is quite a new term that came about during the 1990’s and its purpose was to define a developing set of working practises. The term is believed to derive from “old naval practices called “hot bunking” where shifts of sailors would share limited bunk space”[2]

Hot Desking has become a new method for companies to take advantage of free office space by making it available to independent or freelance workers. Hot Desking gives independent/freelance worker space in which they can progress in their work and thus benefits both parties. The service is used mainly by mobile workers who are constantly on the move and can rent spaces closer to where they are during a specific day.

1 http://dictionary.reference.com/browse/hotdesking
2 http://www.gordano.com/kb.htm?q=1598

Existing Hot-desk service providers/competitors

The Hot Office

Hot Office though an all rounded institution, it has a dedicated section on their website that only deals with hot-desking matters. Hot Office's task is to help employees or businesses on the go, identify areas where they can access office spaces or desk spaces on temporally bases. The hot-desking section within their website seems to be very informative and includes images of the actual premises which I believe is for building consumer confidence as they are able to associate it with the information laid before them. By providing visual representations of the actual premise, without doubt contributes to the products' value chain. Notably, today's consumers have to be fully convinced of a service or product before putting their money into it.

Another important element that they have laid on the page is pricing. They have put what it would cost for one to hire a desk per day or even hourly. This allows businesses as well as employees to be informed in advance and so prepare accordingly. Hot Office has also made use of videos which reveal office spaces and desks in real life, which I believe is a way of engaging with the consumer in order to keep them informed and valued.

On the other hand, though the page is well informative and interlinked, we feel it lacks a degree of freedom. What do we mean by this? It only limits the user to access the available spaces that Hot Office has specified. It would have been better if the user had the freedom of browsing different categories or even entering their own criteria's in order to be matched with that which they are seeking. Therefore, this is one of the areas that our business model will seek to build upon.

Desk Near Me

Desk near Me is a free to use service, providing users with access to view and book desk spaces around the world. The minimalist design is visually clean and professional detailing only the information necessary for the user to understand and operate the website. The website uses search functionality as the only means to of locating a desk. Once a user has entered an address the user is presented with Google Maps integrated into the website featuring place marks of desks available as well as a descending list of desks featured within the website. Clicking on any submission forwards the user to a page featuring information about the desk as well as photos submitted by the user.

The website in contrast fails to integrate desk listings within the place mark description instead only showing the locations of the registered member. As a result, the place marks are not related to the directory of search results, as it is possible for a member to post more than one desk in different locations.

Desk Near Me also allows users to submit a desk available, however the submission process requires the user to register with the website free... The websites registration process facilitates the use of Open ID to allow users with existing accounts in Facebook, Twitter, Google etc. to sign up to the website easing the registration process and minimising the level of mundane tasks required by the user. However, in the event the user has no associated accounts supported by Open ID the user has no alternative means of registration.

The website is professional however provides insufficient information to explain the process to new users and would be greatly benefited by further options allowing the user to expand or decrease the scope of distance the user wishes to travel. Furthermore, showcased user submitted photos of desk space would be benefit greatly from more prominent display in search results as well as individual book pages.

Office Genie

Office Genie is quite a new company as it was launched in 2009. Their business is designed to suit mainly independent workers and small businesses. From our research these are one of the only companies that provide this service. They mainly deal with renting office space rather than desks but they do have a Hot Desking section that allows customers to simply rent a desk.

Some of the features of the site include:

- Simple search functions for customers. They are able to narrow down their search via post-code, price, distance and number of people.
- Simple advertising service for companies as they are able to sign up and create their online advertising campaign through the website.
- A unique feature is that they allow you to compare desk space to see which one would be best. This is something that we have not come across so far in our research.
- Office Genie also contacts the company when a booking is made so the customer does not have to.
- Every desk address is also uploaded on a map so that the customer can see the location and from here click onto Google to get directions.

&Meetings

&Meetings is a leading provider of meeting solutions with an excess of 100 meeting rooms across London and Southern England. The company is the UK's leading provider in this area, however they also provide hot-desking and other services that can be found in the products section. &Meetings do not advertise companies offering desks for rent but offer customers spaces in the venues they provide. Due to the company limiting themselves to their locations they are able to assure the customer that these venue include various office features they will need.

- The company limits renting to one day for each desk and so customer must re-book if they wish to
- Simple form to reserve hot desk,
- Basic drop down menu for desired venues
- 'Our venues' section has Google Maps integrated to show where all venues are located.
- Selecting a particular venue takes you to the venue page providing more detailed information and also a map with the transport links.

Business Model

The main purpose of Deskhub is to connect the supplier (desk advertising company) and the customer (independent/freelance worker). Deskhub acts as a centralised point which allows suppliers to display their available desk spaces on its website to a wider customer area, who then have a broader variety of desk to consider for booking. Considering the many business models, Deskhub shares most of its familiarities with the electronic mall. Electronic Malls are market spaces (Westland 2000) where a collection of products and services are made available under a single platform[1]. Deskhub slightly differs from traditional e-mall in that we specialise in promoting only desks. This we believe will help us differ from our many competitors that provide hot-desking only as a part service. As a result Deskhub through time hope to become the main outlet for people that wish to advertise and book desk spaces.

DeskHub considers itself an e-mall as it shares similar components and features of traditional e-malls.

Components of an E-mall

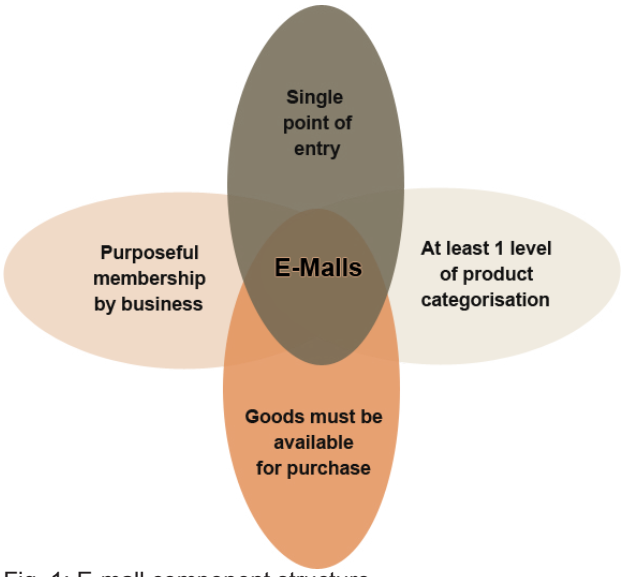


Fig. 1: E-mall component structure

Single point of entry

Deskhub provides customers access to the desks spaces available for rent by suppliers through a single point of entry. The special search engine only allows customers to search for desks available via Deskhub and so is not purely a simple search engine tool.

Purposeful membership by business

Deskhub need suppliers to add desks available in their offices to bring customer traffic to our website. Therefore in the start-up phase of Deskhub will contact suppliers to make free desks spaces available for rent and upload them free of charge on DeskHub. Thus this relationship between Deskhub and the supplier is purposeful for both parties.

1 Electronic Business Systems - Modern Enterprise: Design, Manage and Lead, Page 39

At least 1 level of product categorisation

DeskHub like many other e-malls provide levels of categorisation for products to 'guide them in the process of establishing their needs'[2]. Deskhub provides four levels of categorisation for desks, these are county, town, industry and price. Through much consideration we believe these are the major categories that customers will looks for when choosing a desk and make DeskHub the one stop shopping facility for hot desk services.

Goods must be available for purchase

Deskhub differs in this area as no electronic transaction is done on the present DeskHub website. Deskhub allows customers to request bookings for desks and must then communicate with the suppliers for more information about the desk. The reason for this procedure being taken is because if customers pay for desks before contacting suppliers may lead to unforeseen problems. Thus customers may not receive their products and result in unhappy customers who will need to have their money refunded.

Features of an E-mall

Branding

To progress in any industry the company must create a brand that the customer feels comfortable in using; this state can be created through the design & process of the website but all the quality of the end product or service. The method in which customers search allows them to choose desks by industry. Therefore we will contact and urge recognisable companies in those industries to freely advertise desk spaces that are available in their offices, and so customers searching by industry will be encouraged by the results they see. Through the brands of these companies in the various industries customer loyalty will come into play and customers will be encouraged to reuse and share Deskhub among friends.

Cost-reduction

Deskhub acts as an E-Mall by bringing together suppliers who wish to post desks and customers who wish to book a desk. Deskhub does not profit as the middle person between the buyer and the seller but an intermediary in which they can communicate between each other. The free service that Deskhub provides for both parties means that the price of the product is the original that the supplier has purposed and no business process costs are taken from the booking of the desk.

Competition with traditional malls

Deskhub is a high quality service with no service costs for both parties a very conventional positive of an e-mall in regard to traditional malls. A traditional mall is limited to location and lacks nationwide appeal as customers must travel to the location to use its service. Deskhub are not limited from these constraints and are not just unique from traditional malls but other online hot desk service providers through the search function we provide. Deskhub allows customers to search by industry something that customers in the same field may wish to do to create contacts and hopefully further their career.

2 See Reference page - first link

Exposure to a wider market

DeskHub provides a wide choice of desks advertised by different suppliers (advertising companies). The freely advertised desks are all given equal opportunity to compete with each other; searches are not listed by prices (unless the customer decides to) but by the latest products added to the database. Desks can be found by location, industry and price and so allows the consumer to carry out a fair selection process instead of creating competition between desks. Our suppliers have the option of gaining more promotion for desks they are advertising by paying Deskhub an extra fee to add their desks to the 'Premium Spots" and so be visible on the homepage of DeskHub website.

Providing consultancy

Through the special DeskHub search function the customer is allowed to pick the information (location, industry, price) when looking for desks and thus narrowing down their search. DeskHub through this simple search function provides consultancy to their customer by giving them fields that maybe important to the desk they wish to book and make the right choice. Deskhub also act a consultant to the customer by providing information to the customer from it detailed products page. The products page contains information about the desk, company, extra feature and transport looks to make sure the customer is fully aware of the product before booking. Deskhub hope to create a review section in the near feature where customers can review desks or companies they have used.

B2B and B2C models

After looking at analysing the E-mall business model we can also apply the B2B and B2C models to the DeskHub business model. The reason that we can apply both models is down to the fact that we as a company act as intermediary between both companies and customers.

B2B

B2B e-commerce deals with buy side activities. We can apply this to our model as DeskHub has communication with the suppliers who advertise with us. This is done primarily through the website whereby suppliers can register on our site. Suppliers who wish to further promote their desk via DeskHub's premium desk service have to pay an extra fee thus displayed their desks on DeskHub's homepage. The premium desk service charges will be paid by the supplier through PayPal to DeskHub. We can also apply B2B when dealing with third party advertisers. Companies will pay us via PayPal to be able to advertise their products on our site.

B2C

B2C e-commerce deals with the customer side activities. The model takes place first with the customer registering with DeskHub. Once the customer has registered DeskHub they are able to search and requests bookings for desks of their choice. Once the customer has requested a booking the transaction between our supplier (desk advertisers) and the customer (independent worker) can take place. Therefore, the B2C model to be applied between the supplier and customer through the platform DeskHub provides.

DeskHub's E-Processes

Nowadays we are moving from human based facilitation to electronic means when it comes to execution of business activities. This is where the business process re-engineering is coming in. Business process is a collection of tasks that a company tends to follow in order to accomplish its objectives. Re-engineered is a new term which deals with new methods of daily business execution. This has therefore created a new set of rules which can be hailed as e-processes as daily business activities can now be emulated in electronic format.

Why Adapt?

Because of the capabilities that this new approach is offering, it's one of the reasons as to why we chose our electronic business model as E-mall. We thought this would help us merge daily business management with technology thus delivering accelerated responses to the end users. Our business model's aim is to provide a platform where different companies can advertise their available desks spaces geared towards employees on the go or even any other person that might be seeking to rent a desk. This therefore defines our model as it is bringing different parties under one umbrella that performs identical business activities which also means greater exposure.

Instead of having potential consumers attend a physical store for desk booking; our platform will offer them the capability to perform such activities in electronic means. This therefore demands e-process identification in place which will emulate what really goes on in the physical world (brick and mortar) as we are dealing with electronic matters.

Facilitation of Our E-process (From Buy side of things)

One of the main chains of e-process that our business model offers is the existence of products (desk spaces). This has therefore created an online catalogue of which potential customers will be able to use in order to browse different products that are available. In order for products to appear on Deskhub, there has been and will always be immense interaction between DeskHub and our clients or suppliers who are the advertising companies seeking to post their available desk spaces on our platform. This will therefore establish a B2B model which occurs when two businesses are interacting. This side of business is normally referred to as the buy side as it is where a company deals with its supplier's in order to attain inventory for consumer consumption. To facilitate the process of inventory gain, DeskHub have set in place a registration form which companies will first

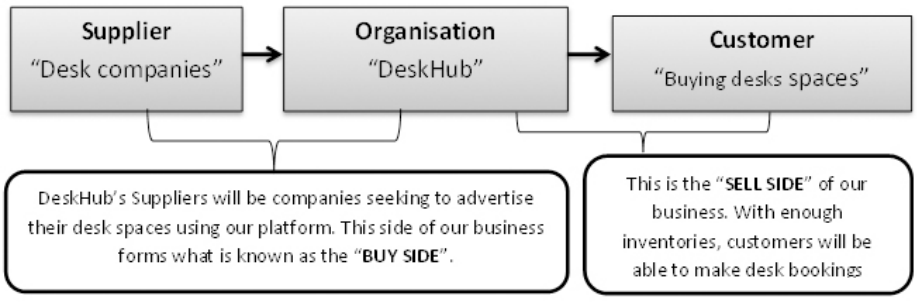
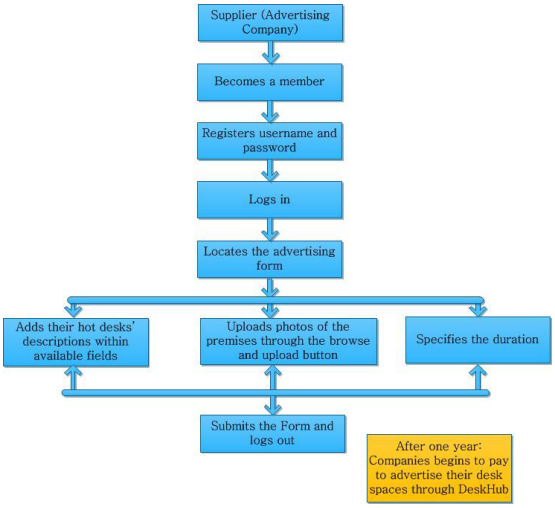


Fig. 2: B2B & B2C supply chain diagram

have to fill in order to become members with Deskhub which will then give them access of posting desks as they will be required to log in through generate username and password. The idea of companies' having to register will not only provide authentic details but will also enable DeskHub to profile and single out companies who have remained loyal in times when Deskhub will be offering rewards such allocation of premium spots within our homepage which will also mean instant exposure of such companies.



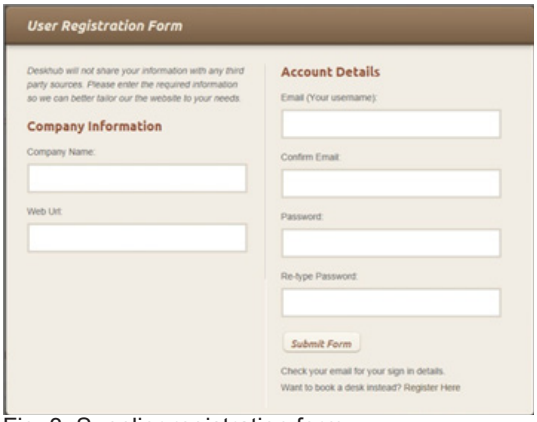


Fig. 3: Supplier registration form

Facilitation of Our E-process (From Buy side of things Continued)

Once an advertising company has registered and has logged in, they will then be able to gain access to what we have called the client area whereby they will be able to load and upload their available desks content. To facilitate this process, we have designed an online application form of which our suppliers (advertising companies) will use to interact with our system (database). We see this as an effective method of business activity as Deskhub doesn't need personnel on standby to facilitate this process as desks will be posted directly into our database and will be stored for view. This will therefore eliminate number of overheads which also means reduction per cost. The beauty regarding the application form is the possibility of offering our suppliers necessary tools and information within one page and thus eliminating potential navigational problems.

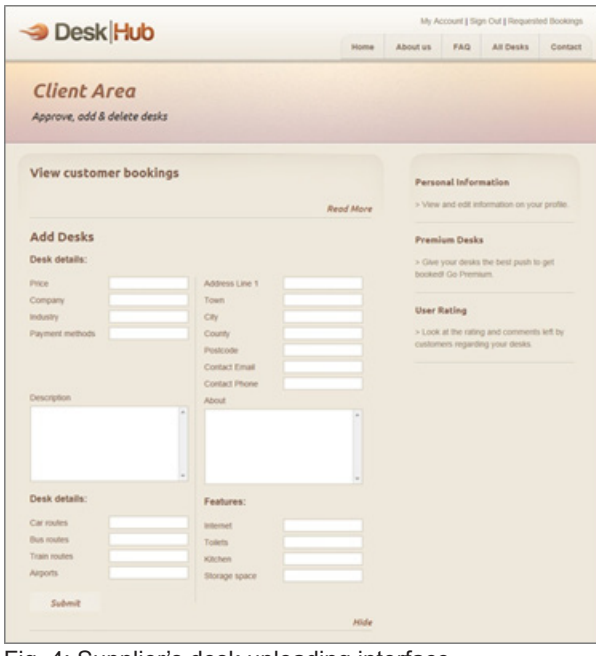
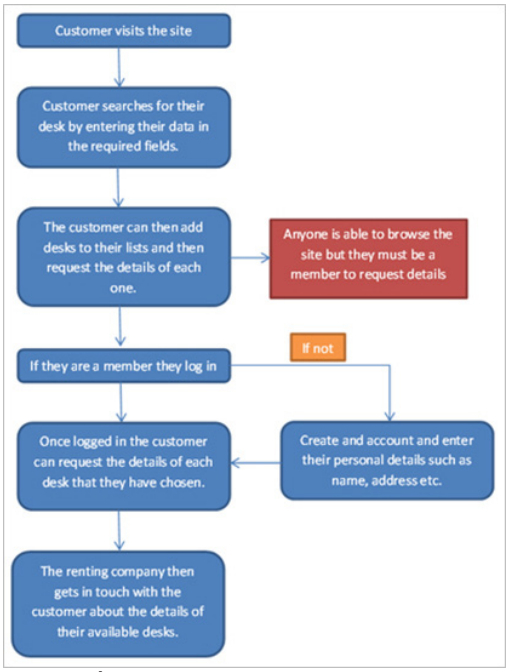


Fig. 4: Supplier's desk uploading interface

Facilitation of Our E-process (From Sell side of things)

As part of our e-process, our system has set in place measures which will then allow potential customers looking for desk spaces to place orders. This is the point whereby DeskHub will establish its B2C model which now deals with sell side of things. This is where a company such as DeskHub interacts with potential customers. This is where the marketing aspect comes in. Note we have first of all dealt with the marketing aspect. This is where desks has been made available for consumer exposure which then allows them to browse different categories before forming a desire to place booking. In order to facilitate DeskHub's internal operations, we have again set up a mandate of which customers will first have to be members in order to gain access of booking, but we have left browsing products open for all. In a sense, this has created a marketing environment whereby customers are able to access arrays of products available (desk spaces) from our different suppliers (advertising companies) which in return helps them make their choices accordingly.



Kiran Bhamra Cox

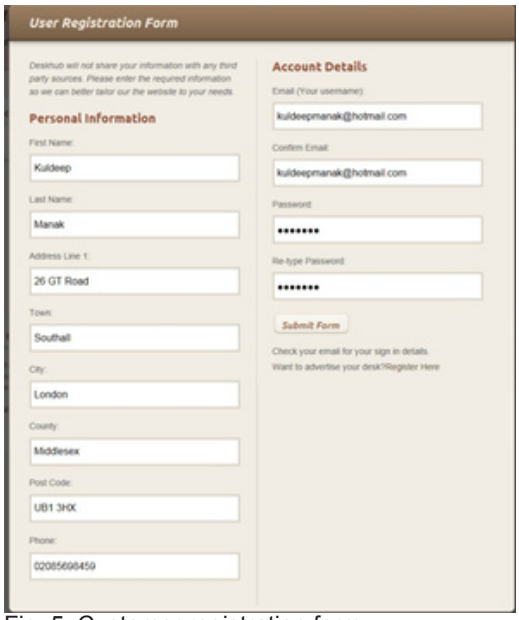


Fig. 5: Customer registration form

Other processes / Faciliation in place for execution

On our system, we have also set up a page by the name "all desks". This page will always display available desk spaces at random of which a customer might come across and develop interest. On the other hand, we thought it would also be a good idea to create some form of freedom whereby customers are able to customize their own choices which in return will eliminate the need of them having to browse through the entire catalogue in search of a desk. The search facility which can be accessed on our "Homepage" and on the "all desks" pages will therefore enable customers to generate quick results. It will also help customers narrow down their search as they will be able to input their industry e.g. "media". By selecting the media category, the customers will only gain available desk spaces within the media category. As a result, this will minimise the number of hits returned and thus delivering them with the most sought after data sets which we believe will save time. The fact that customers are able to add desired industry within the search facility also means greater collaboration as they will be able to develop contacts with other customers within the media industry, who may have booked a desk under the media category once they arrive at the physical premise.

The beauty of our search facility is the possibility of being able to take what the user as input on the search fields and matching it exactly with what is present in our database. As you can see, we have therefore established a business activity in the sense that we first have an input (inclusion of data by the user via the search fields), then the process (this is where the user clicks the search button and our database takes that data and matches with the closest result possible, and finally the output which is the display of the results on within the front-end after the process has been conducted.

Fig. 6: Customer search facility

Similar case with our suppliers (advertising companies), potential desk bookers will also be looked after. DeskHub will be in regular contact with them whenever there are further available desks within their areas of interest. As you can see, the whole purpose of membership is to help Deskhub be in touch with its users and more so develop a loyal supplier / customer relationship. We therefore see the registration and membership aspect as one pillar in terms of parties' retention.

Faciliation in place for Settlement

Our next step within Deskhub's E-process is the facilitation of order now that a customer has placed an order. The beauty of our system is that it has the capability of recording and storing different desks that the customer may have selected as well as the capability of allowing them to drop those that they may not wish to continue with through the present trash icon.
This will therefore provide the customer with some form of wish list which we thought mirrors what

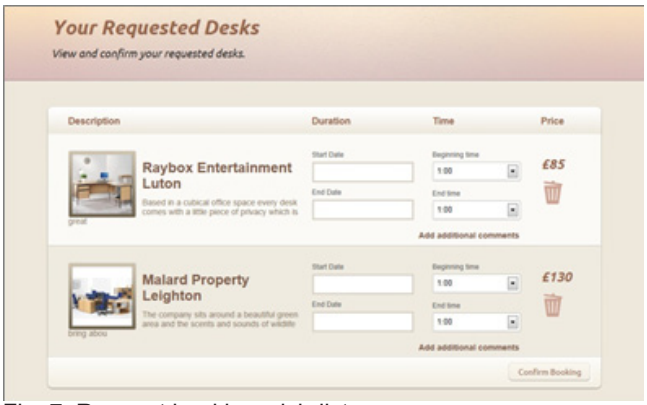


Fig. 7: Request booking wish-list

goes on in the physical world whereby we have the power to pick and drop items if we do not wish to progress them to the counter and thus providing them with real customer experience. Once a customer is happy with a certain desk space of which they will have viewed through the supplied images, they can then click the "request booking" button to proceed. One of the main aspects

when it comes to consumer acquisition and retention is development of reassurance which is the main reason as to why DeskHub demands supply companies to offer graphical views of desks available rather than just posting of plain text. This by itself creates consumer confidence in the sense that they can actually view and relate to what they are about to put their money into.

Since DeskHub is acting as an intermediary force between suppliers (advertising companies) and customers, this is the point whereby we sought to develop a link whereby the two parties can interact. We can therefore state we have the advertising companies as our “suppliers”, Deskhub as the intermediary force, and in the further end we have customers who book desks spaces using Deskhub. Expanding further on the “request booking” section, customers are also offered the chance to enter desired dates and times of which they would like to have their select desk available and finally click the “confirm booking” button which will send the information to the suppler for confirmation. We saw this as an effective form of practise as customers have the chance to freely input their own availabilities rather than being confined to “just available”. The system then allows a customer to confirm their requested bookings of which the data is entered into the database and an email notification is sent to the supplier (advertising company) that originally posted the desk notifying them of a possibility of booking. DeskHub differentiates from our competitors by requiring suppliers (advertising company) to review and confirm the customer’s requested booking(s) before the initial booking process is complete. As you can see, there is a detailed process that DeskHub will always have to facilitate as part of sales settlement.

Approval of order

The confirmation of the desk availability will be facilitated by the supply (advertising company) which means a need to establishment of communication channel in order to fully settle the customer’s request. By requiring the supplier (advertising company) to approve the customers’ bookings, this minimises the possibility of dissatisfied customers’ by eliminating potential problem areas that would require a client to issue a refund. At the moment Deskhub has got as far as implementing use of emails or telephone when it comes to making necessary payment arrangements but hope to develop online payment mechanisms which will assist with sales settlement via electronic means in the near future.

Fig. 8: Supplier desk approval interface

Finance

In terms finance, DeskHub's only means of generating revenue is through the selling of premium advertising spots to desk advertising companies and through selling web space for third party advertisers. For this action we have therefore identified having the e-process of payment operated through a PayPal link which can be found on our website but as for now we haven't fully implemented but we have it noted down for our future works. We do not charge for uploading of desk and the reason for this is because we are an emerging company and we feel we are not well established to charge for use of our service as first seek to build our name and reputation. Overall as you may you may understand, Deskhub's E-process has in it a number of stakeholders or players whose input is very crucial to determining the final outcome. As seen, DeskHub has prepared mechanisms which deals with the pre-sale category which is more to do with marketing and for this to happen, the desk suppliers have to be present in order to make possibility of having an online catalogue real. Sale execution is another category that again our E-process chain will always have to deal with. This is where potential customers will express desires to have particular desk(S) and will have passed through the "request booking" and "confirm booking" points. The suppliers will then have to settle the customer's booking which will also include facilitation of delivery or at least confirmation of desk availability which will now lead to payment of product (desk space).

Process Latter stages

In the latter stage of product purchase or even after sale, there tends to be facilitation of follow up or guidance in-case a customer is unclear of something or would like to send in views regarding a specific booking. Deskhub have therefore identified specific touch points which it hopes to utilized in order to communicate with customers. We also hope to pass such information to our key suppliers which might also help them amend or improve their strategic goals accordingly. DeskHub's key touch-point includes;

- Emails, telephone
- Tailored content
- FAQ page
- Contact form

The specified touch points will be used for different reasons. For instance, emails and tailored contented will be used to keep customers up-to-date with latest desk available. The contact form and FAQ page will be used to aid customers and clients with any issues or queries they may have regarding our service.

DeskHub's e-processes vs. Competitors

To finalise this section, we are going to specify why we think DeskHub's e-process stands at healthy lead against our competitors whom we have identified at the beginning of this report. First of all, our system offers search criteria of which customers can use to input and select different options regarding desk that they may be looking for, of which our competitors offers too but we feel our system offers further variety of choices which allows customers to better tailor their search to gain best results possible.

On system also has the capability of allowing our suppliers (advertising companies) to add their available desk spaces directly into our database through the client area section of which our competitors do not offer. We therefore have in place a well-structured form which suppliers will be able to add available desk information as well as adding of related desk images. This means advertise companies can interact with our system directly with no need of peer facilitation. What also puts us at a lead is the capability of customers being able to request desks which are then added into some form of wish list of which they can either drop or continue with once they are fully convinced of. This therefore creates real customer experience. The beauty of the DeskHub website is that the system realistically takes into account the real world factors surrounding the booking of desk space both in the physical and digital environment. In contrast, our competitors e-processes currently use a booking system that allow customers to place instant bookings complete with payment without checking with the supplier to ensure the desk spacing is initially available. DeskHub offers the idea of having desk availability confirmed first by the supply company before settling the booking.

Value Chains

Michael Porter's (1985) value chain is used by companies to help them identify specific activities within their business that adds value. The types of activities that are classed as value adding can be split into two categories which are primary and secondary activities.

DeskHub has a variety of different value adding activities that all form part of the value chain. Each individual activity serves its own purpose in bettering the business.

Here is a breakdown of some of the value adding activities:

Primary Activities

- Marketing and Sales
- After Sales Service

Secondary Activities

- Technology Development

One of the main activities is in the way that DeskHub brings suppliers (advertising companies) and customers together to create one point of contact. We as a company find the contacts/suppliers of the desks and arrange prices and terms with them. By doing this we eliminate the need for customers to go out and contact individual companies as we provide them with one place where they can browse a wide range of available desks. This also applies to suppliers who want to advertise desks. Once they have signed up and registered the rest is done by our system which will automatically store their details and make them available to find on the website.

Another way in which value is added is through the use of technology. The design of our system allows users to make a very specific search in order to find what they are looking for. From here they are easily able to compile a list of potential desks and edit this list before making their decision. Also through client and customer areas updating and editing information is made simple through the use of forms and interactive tables. All of this back-end technology is brought together through a well laid out website whereby browsing and searching are made easy through the use

drop down menus with clear and precise page layouts that display only the required information. The database that drives our site is a key piece of technology. Online forms have been created that allow suppliers to add new desk information and upload images directly through their account area which we have called (client area). By doing this we take out the need for them to contact us with new details thereby reducing time.

The way in which sales are conducted is a major value chain activity. We make it easy for the customer to request a booking. Searching is made easy through the navigation system and once they have found the desk that suits them they can request a booking. From here they are given the options to choose the starting dates and times and can then simply confirm the booking. Once this is done the supplier (advertiser) is able to see the request and approve it.

Advertising is one of the key value adding activities. In terms of advertising we designed the site so that we can have third party advertising in the form of banners that will be placed on certain pages on the site. We also offer the ability for clients to purchase “premium” advertising spots. These spots include the “Featured Desks” section on the homepage and also being at the top item during product browsing. This will allow us as a company to generate revenue.

As a way of marketing ourselves we decided to make use of the social networking sites. We based ourselves on Facebook, Twitter, Google+ and LinkedIn. By doing this we add value to the business as this is a free way of advertising to a large audience.

After sales service is one of the most important primary activities for DeskHub and forms our Customer Relationship Management System (CRM). Value is added to the business by providing our customers with an individual aftersales service. This is done through a variety customer touch points (contact with the customers). The first is through custom online content that is available to the customer in their account area on the site. Here they will be shown tailored information which will consist of new desks that have been added to the site that are similar to ones that the customer has previously booked. Also in this section of the site there is a customer history section whereby customers are able to quickly re-book previously used desks.

The second part of the after sales service is e-mail notification. Customers will be e-mailed as and when new desks come in that match similar criteria to that of desks they have previously booked. This is a great value adding activity as there is a higher chance that the customers will see their e-mails rather than the posted desks on the website.

Lastly is the way in which we provide customers the ability to communicate with us and also provide them with information. Our telephone number and e-mail are available from the site should a customer or client feel the need to contact us. There is also a contact form on the “Contact Us” page where people are able to quickly ask us a question. We also created an FAQ page that contains most of the necessary information that users will need to use the site.

Technical Analysis of design and programming structure

The entire design of the website has been made intuitive and easy to use through a clear and consistent layout. Furthermore DeskHub has applied great importance on creating a design that is professional as well as visually engaging and representative of hot-desking to encourage potential customers and suppliers to use the website. This has played an important role in the appropriate communication to end users and the overall reflection on the e-business itself to outside users.

Logo

The logo is an important part of every business. It is the main graphic used to identify one company from the next, and an iconic logo will always stick in the minds of customers. When it came to designing our logo we wanted to have something that showed a desk, however we did not want to use an icon of a desk and merge it with the text. To avoid doing this it was decided to look into using negative space to create an icon within the text. The reason for doing this is down to keeping it simple. By altering the text to create an icon we reduce the need to use any images.

Fig. 9: DeskHub logo

Here is an image of the final logo. As you can see we edited the letter “H” by removing some of the letter in the bottom half to create the image of a desk. With this subtle touch we were able to create something very unique yet simplistic which is exactly the look and feel we were looking for.

Navigation/Usability

One of DeskHub mains strengths over competitors is the clear and easy to use user experience delivered by the website. The website has been clearly designed to allow users to search postings through an accurate and easy to use search tool. By implementing the use of drop down menus rather than input boxes, DeskHub is able to deliver accurate search results based on the users specific preferences also increasing the speed at which the user is able to search. Furthermore, eliminating the need for the user to type and in addition increasing the likelihood of returning results to the end user.

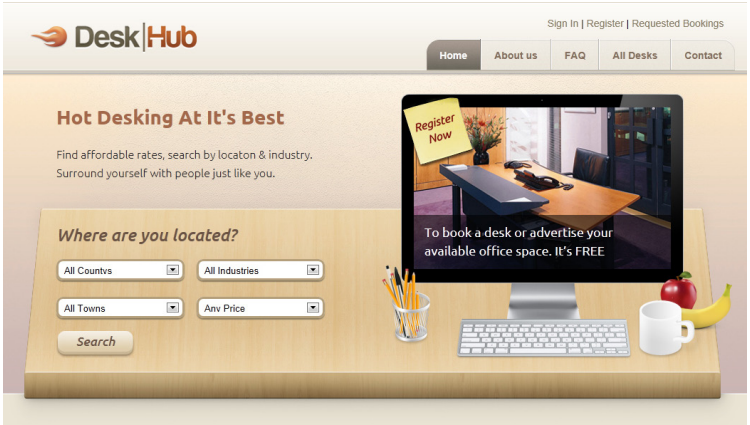


Fig. 10: DeskHub’s search interface

This clear and precise structure is continued throughout the website. An example of this is in the client/customer areas. Once a user is logged on all of their information such as personal details, booked desks and history are all accessible on one page. This reduces users having to navigate through multiple pages to find the required information. To add to this, JQuery was used to give the user the option to hide and reveal items such as tables and forms. This increases the positives in the user experience as the amount of information is reduced to only what is specified.

Adding to this, back end technologies were used to aid users in the event that an error should occur. When filling in any of the forms each field has validation that requires you to meet a certain criteria e.g. a valid e-mail address. In the event that human error occurs the user will be prompted with a message alerting them of what has happened. To add to this all of the fields will stay populated with the entered information so that the user does not have to fill in the form again.

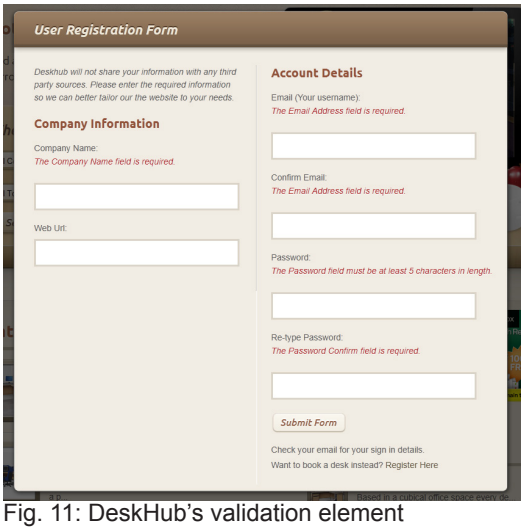


Fig. 11: DeskHub's validation element

Colour Scheme

The scheme throughout the website consists of simplistic shades of creams and warm colours. The idea behind this was to set the tone of the website as a comfortable and smooth platform for both suppliers and customers to come and use our services with ease. The colour scheme purposely decides to go against harsh colours used by competitors such as The Hot Office and decides for more subtle colour choices to stop the chance of customers losing focus or becoming confused. The table rows throughout the website use two different colours to help customer breakdown information and make the table easier on the eye.

The mixture of creams and browns pushes forward our idea of interior design of many modern offices. We hope this tone and feel via our colour scheme and use of gradients denotes to the customer the types of office space we provide which is of a high quality.

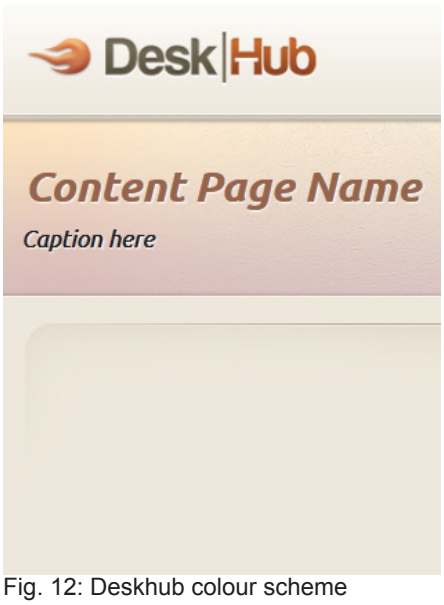


Fig. 12: Deskhub colour scheme

Feature	Type
Internet Access:	Broadband 4mbps ethernet & wired
Power sockets:	4x sockets
Access to toilets:	Every floor homie
Access to office utensils:	Every floor homie

Fig. 13: DeskHub table design

Typography

As part of our design process, we closely valued how the DeskHub's website would appear in terms of typography. We took into the account the implications that poor typography can have on user experience. To overcome this setback, we decided to come up with a routine of practice of which we differentiated different elements of the body of our website. As our website reveals, we used headings on every page to introduce the user. Normally a good heading engages with the user and above all makes one understand the intended purpose of that particular page. For better understanding we also thought use of subheadings would further breakdown the heading for even further understanding. The body text was also differentiated from the headings in order to help the user know where the main body text starts and ends.

We also took into account the font style used within the pages. As computer users, we tend to give up reading webpages whereby a poor font style has been used. It can be time consuming to figure out the point being passed across due to unfitting font style. To avoid this possibility, we choose to use two distinct font styles. We therefore adapted a different font style when it came to headings and body text.

Font size was another element that we took into account. As the website reveals, we used a slightly bigger font style when it came to headings and sub-headings. This was purposely to differentiate the headings from the main body text.

Example:

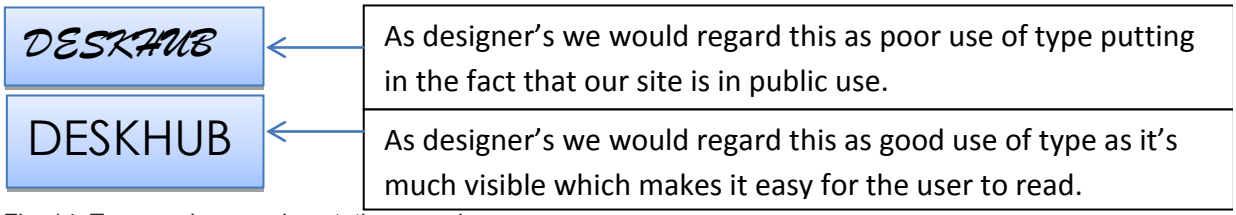


Fig. 14: Typography experimentation sample

Overall as you can see, typography when it comes to design is an extremely challenging task since it involves a lot of creativity and sensitivity. The fonts for example have to be relative to the message and it must be arranged in a proper manner so the users don't feel awkward to see it on the website. Otherwise this would result in failing to attract the user and the purpose behind the message be missed. On the other hand, having professional typography is an excellent idea but only when used appropriately. In order to facilitate our design typography, we utilized the power of (CSS) which allowed us to style different elements of our design's typography which in the end produce good results as our final design indicates.

Security & Technology

Due to the nature of the business model, the DeskHub website requires users to create accounts and enter information some of which is sensitive data that requires sufficient data protection measures to ensure the information stored, is inaccessible to unauthorised users.

The emphasis on security has played the up most of importance during the development of DeskHub in considering the legal responsibilities and real world implications of failing to protect personal data. As a result in order to significantly reduce the possibility of unauthorised access or intrusion to personal data stored on the database, the DeskHub website makes use of an open source PHP framework named “Codeigniter” built to provide a robust and secure system developers are able to build upon. The purpose behind using an existing object-orientated framework is to establish client-server communication between the users client-side interface and the websites back-end database in order to enable users to create, read, update and delete dynamic content stored in the database. Building the website on top of the robust framework that has been tried and tested amongst many existing commercial websites and web applications has provided the project with greater elements of security by integrating encryption to areas of the project prone to intrusion and unauthorised manipulation. Furthermore the implementation of a framework will allow DeskHub to continuously update the framework in order to ensure the latest vulnerabilities are patched. In addition the DeskHub system has the capability to encrypt url information using SSL in order to ensure greater security payment handling in the future. The system makes use of PHP as the back-end server-side technology to perform the primary logic behind processing a user’s request. As a result the systems core files are made inaccessible to users visiting the website.

As a means of identifying consumer behaviour and booking patterns the website requires customers to register with DeskHub enabling efficient customer relationship management and above all understand the customer’s needs and preferences to better target the user through after sales service promotion using email notifications as an access mechanism in order to build greater customer loyalty. The implementation of a secure login and accounts system has been developed to provide a layer of privacy control and authentication for suppliers wishing to post content to the website and customers wishing to make a request for a booking. As a result two separate account areas have been developed to tailor specific tools and content based on the user’s login details entered. In order to ensure adequate security is maintained and the information applicable is made only accessible to the individual user, the website queries the database to ensure the username registered is unique. Furthermore password restrictions are set to a minimum of five characters. However the requirement to create an account is also a barrier, which may prevent potential customers from completing the e-process. As a result the website has been developed to minimise the effort required to complete the booking process and improve user experience by creating preloaded JQuery enabled pop-up forms that enable the user to quickly register/login eliminating the need to load a new page. In addition repopulating forms in the event the user has not completed or satisfied the forms validation rules.

The database schema below was designed as a bespoke system specifically designed to fulfil DeskHub’s requirements and create a seamless e-process for end users. Furthermore the database has been designed with scalable and dynamic content in mind to allow for easy implementation and extensibility in the future. The architecture of the data subsystem segregates entities into specific tables designed to satisfy one or more queries in order to eliminate redundancies and provide faster accessing times for the user as well as help maximise the efficiency of the database to accelerate electronic data interchange (EDI) and ultimately assist in the e-business management process.

Appendix: Please view Fig. 16 - DeskHub database schema

In order to establish a session with the user logged in and to ensure their account area is accessible throughout whilst navigating through the website, the system creates cookies to identify the user. As a result this information can be used to specifically tailor the websites content based on the user's location and previous preferences to bookings made in the past. Realising that a potential vulnerability to the open system is unauthorised, manipulation of cookie data was placed in check. Deskhub has implemented 128bit cookie encryption only readable by the PHP system files hosted on the web server. In addition the password the user enters in order gain access to their accounts area is kept private through the implementation of login and registry forms using the appropriate password field. In order to ensure that data is secure in the event an unauthorised member has gained access to the data, passwords have been made unidentifiable by implementing md5 data type password encryption to the database.

To greater promote the DeskHub website, the website has been developed with SEO in mind. As a result during the development we worked towards following standard practices to ensure greater search engine optimisation. As a result measures were taken to appropriately name all files and ensure all XHTML pages were validated to ensure no errors are present and eliminated any use for non-search engine friendly technologies such as AJAX and flash. Designing the web pages also played a key role to ensure all text present on each web page could be added using html rather than images.

Although all measures have been taken into account to ensure the system is reliable and secure, the effort in safeguarding against potential threats will be a continuous one in order to ensure the website is constantly protected against new threats. The developed website in its current state fulfils the projects primary functions in being able to:

- Create supplier (Advertiser) and customer accounts,
- Post new content to the site as a supplier
- Query the database to retrieve information with the ability to narrow search selections and view postings in detail as well as retrieve content specific to individual members
- Request bookings on multiple postings as a customer
- Receive email notifications on bookings requested by customers
- Retrieve customer information from those requesting a booking
- Approve bookings and remove postings via a tailored interface specific to the supplier

Technical & Design Strengths & Weaknesses

Strengths surrounding the DeskHub include the user's ability to interact with the DeskHub website without the need for human intervention from a third party which include the ability post dynamic content as well as request and confirm bookings on any desks posted within the website improving client satisfaction by eliminating the need for the involvement of a second party to register users and authorise posted content.

Competitors Weaknesses

The beauty of the DeskHub website is that the system realistically takes into account the real world factors surrounding the booking of desk space both in the physical and digital environment. In contrast, our competitors e-processes currently use a booking system that allow customers to place instant bookings complete with payment without checking with the supplier to ensure the

desk spacing is initially available. As a result, our competitors are failing to take into account that suppliers are unlikely to be advertising on one single website and are likely to receive bookings via other websites and other forms of communication. Furthermore the implementation of the sales order process requires suppliers to constantly update the material posted. This becomes greatly impractical the more desk spacing the company supplies and the more websites the same content is posted on. Failing to constantly update this content leads to customers making purchases on pre-booked times only to discover the space is not available and that a refund must be issued, ultimately leading to dissatisfied customers. By acting as intermediaries between the customer and company our competitors business models are strategically impractical due to the fact that single bookings from a customer is enough to establish a relationship directly between the supplier and as a result eliminate additional charges incurred from using the e-business in the future. As a result the potential growth by our competitors is limited.

An Alternative System by DeskHub

In contrast, the DeskHub system sends an email notification on behalf of a user requesting a booking to the supplier necessitating confirmation of the customers requested date and times. During this process the supplier and customer is able communicate directly using the contact information exchanged by the DeskHub system. By eliminating the process of disintermediation, customers and suppliers can communicate together without any additional fee incurred for using DeskHub. With availability serving as a key success factor for the e-business growth, suppliers are encouraged through free-of-charge postings. This provides greater availability and range to potential customers, which in return provides more bookings to suppliers and thus encourages suppliers to create more postings and continue to use DeskHub. As a result a positive feedback loop is generated, creating competitive advantage and great potential for rapid growth in the e-business.

Quality Control

As the process of handling payments is handled directly between the supplier and the customer rather than DeskHub, this provides greater flexibility over payment to customer. However as it is the responsibility of the customer to choose a payment of their choice it is important that the payment option is safe in the event a refund is required. In order to deter customers from making risky payment choices DeskHub would implement an optional (but recommended) PayPal payment feature. Additionally due to the nature of the business model, a challenge in the daily operations of the business is ensuring supplier's postings are genuine and not fraudulent attempts to steal money from unsuspecting customers and ultimately negatively impact DeskHub's brand identity. As a result of this potential threat it is important that such postings need to be quickly identified. In response DeskHub would continuously monitor postings and validate the credentials based on the information supplied in the posting. Furthermore DeskHub would implement a user review system as well as flag feature to alert DeskHub of any fraudulent postings and deter other end users from doing business with the same supplier.

Privacy & Data Protection

Due to the way customers and suppliers must communicate, the website currently exchanges contact details between both the supplier and customer so that a transaction can take place. The negative impact of sharing the customers contact details during this process is evidently a concern of ensuring the supplier does not mishandle the details to promote spam or sale to third parties. Taking this factor into consideration the DeskHub system would ideally encrypt a user's email ad-

dress and implement I.T infrastructures using mail servers as a proxy to forward messages from the supplier to the customer so that email addresses of customers can remain anonymous. Additionally upon registration, suppliers must agree to the terms & conditions stating all customer details released to the supplier must remain private.

Security

In the event the server is compromised and unauthorised access to the database has been gained, the passwords of all accounts are sufficiently encrypted and as a result are non-distinguishable if ever maliciously obtained. By adopting standard industry practices to protect data every step has been taken to ensure the data stored is only accessible by its intended users. As a result the current level of protection employed by the database and website is sufficient to be deployed online for genuine use by members of the public.

Our Business Model Analysis

Looking at our business model as an E-mall we can see that we are not exactly the same as classic E-mall as we specialise in one product. Also as we currently do not sell the desks through our site as the traditional e-mall would do. We act as an intermediary force that brings the suppliers (companies advertising desks) to the customers. However we feel that we are closest to this business model as we bring many different companies together to sell a product under one umbrella.

Looking at the business life cycle we believe our business lies in the non-cyclic function “Lay Groundwork”. The ground work that is needed is the accumulation of suppliers and advertising campaigns to increase our customer base. Once we have launched we plan to maintain our business model by keeping up to date with new contacts which will help us to remain in the cyclic phases of the business life cycle.

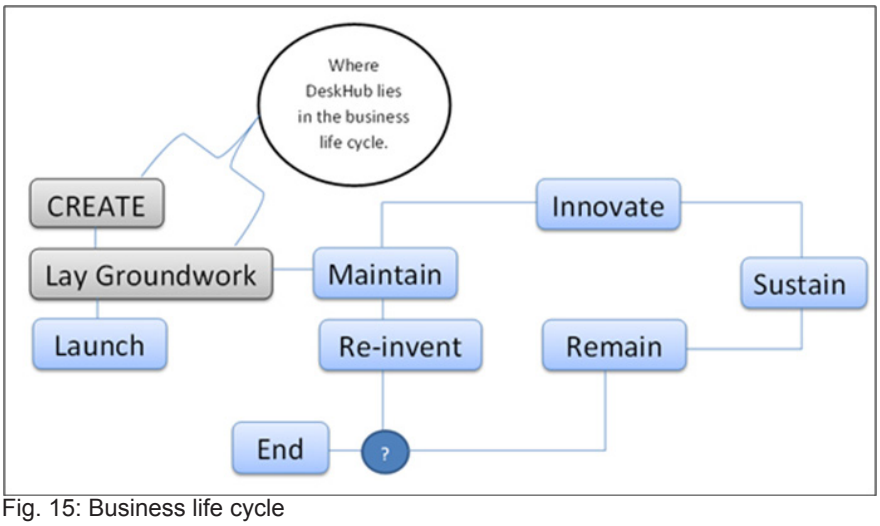


Fig. 15: Business life cycle

Future Developments

Business Strategy & Operations In The Future

DeskHub's plan and e-business strategy for the future is centred on prioritising our business goals to deliver a complete system that is fully operational and satisfies end user requirements prior to full operational deployment. This entails full implementation of all member tools/features including the ability to edit existing posts, upload gallery images and implement user review and feedback on listed desks and suppliers. Furthermore as a means of assuring users, electronic certification would be used to verify DeskHub as a legitimate business to provide greater confidence to users. Additionally, develop and build upon a supply chain from companies around the United Kingdom to strengthen the range of content within the website with the goal of surpassing the availability, user base of our competitors and establishing DeskHub as the U.K's leading Hot Desking e-business.

As the business develops into sustainable growth and is able to achieve a steady income from advertising, DeskHub will move its business operations into offices appropriately situated within the greater London area where the business is able to centralise management and development operations of the e-business to achieve business growth and profit. To achieve business growth, DeskHub aims to form strategic alliances with brick & mortar businesses providing hot-desking facilities in the United Kingdom as well as form affiliate partnerships with e-businesses that target a select group of business professional's for the purpose of driving potential national and international users to the DeskHub website.

In order to gain greater understanding from our users purchasing patterns as well as identify successful and unsuccessful referrals from external sources and affiliates. DeskHub plans to implement Google Analytics to easily analyze consumer behavior across the site and identify entry and exit points in order to better improve the website and provide valuable data to the businesses marketing and sales effort. Furthermore in order to gain a genuine understanding from users, DeskHub will conduct continuous market research through customer satisfaction surveys and focus groups as well monitor our competitors in order to help strengthen brand credibility and identify key opportunity areas in order to respond to a constantly changing marketplace and address changing consumer needs.

Conclusions

This section will cover a conclusive perspective of how we believe to have performed in this project and whether we were able to achieve our initial target which was to select and develop an E-mall business model which can bring common businesses under one umbrella in order to do business. Our group consisted of four, and so much of the work was started and completed together. Due to the amount of effort and time needed we decided to meet in the design and research period once a week. During this time an aim would be discussed and would need to be completed at the specified time. This helped the group be time effective in this period. Throughout the development period the group met twice a week and many ideas and issues would have genuine agreement within the team before further steps were taken. Overall we believe the team has met the targets set out and have produced and understood the business processes and how to emulate them into an electronic format to help build a successful e-business.

One of the major elements that we have come to appreciate in the course of this project is the understanding and exposure of how technology has really changed the dynamics of daily business activities. Computers are now being more utilized when it comes to daily business transactions. What used to take days or even weeks to execute is taking hours if not seconds. Thus much time has been saved and such time savings are being focusing more on other business activities.
We therefore believe our proposed e-business model is an example of business process re-engineered. We believe this in the fact that we were able to bring different (advertising companies) under one common platform where they can perform their daily business activities. In the physical world if someone wants to book a desk, they would either walk in in a real estate premise or call in in order to book a desk space.

Though we are aware of existing businesses performing similar activities as our proposed model, we believe our model extends that possibility even further by allowing different companies be able to post their available office desks directly to our database for consumer access. We therefore see a new form of business activity emerging here. All this has been made possible through technical measures taken into account. We were able to research, gather and utilized powerful technologies such as HTML, CSS, JQUERY and PHP in order to aid for such processes which as a results will help DeskHub affect its daily business performances. During our testing stages of our proposed e-business model, we came to fully appreciate that changes in the processes of daily business activities will indeed and have already started to take effect on cash flow, service delivery and customer satisfaction.

Overall we feel that the future developments we have speculated on for DeskHub can be implemented. We believe the idea of growth and the move into direct commerce through our site to be the next step in order to start generating more revenue for the business. To add to this our research into the market shows that Hot Desking is an emerging business that is ever growing as people become more and more mobile and in need of a variety of locations to set up a point to work.

The ideas for our marketing strategy also seems that it could work in a positive way as using technologies such as Google Analytics will give us the ability to monitor consumer behaviour in-house without the need to hire an external company to carry out such a task. However we understand that not all plans go accordingly and some of the plans for the future may not solidify or fully work. Therefore it is for this reason that we decided to start on a smaller scale to test whether our E-business system is viable once out in the market.

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http://www.adtec.co.uk/now.html

http://www.samedaycompany.co.uk/rent-a-desk.php
http://www.swinnovationcentres.co.uk/paignton/paignton_to_let.php

http://bronx.olx.com/brand-new-office-space-desk-now-available-for-rent-iid-26621771
http://www.mediacentre.org/office_space/desk_space/

http://www.officesupermarket.co.uk/c/Office_Furniture_Elegance_Range.htm#

http://forum.blu-ray.com/showthread.php?p=5658048

http://floors-walls-ceilings.blogspot.com/

http://www.rumbarger.com/tools.html

http://www.bidonmyhouse.co.uk/

Web Banners:
250 x 400 Ghost Protocol Banner, Results/Search Page (images/results/250x400_banner.jpg):
http://forum.blu-ray.com/showthread.php?p=5658048

180x 150 Homepage banner 1 (images/homepage/banners/advert1.jpg):
http://floors-walls-ceilings.blogspot.com/

180x 150 Homepage banner 2 (images/homepage/banners/advert2.jpg):
http://www.rumbarger.com/tools.html

728x 90 Homepage banner (images/homepage/banners/banner_bottom.jpg):
http://www.bidonmyhouse.co.uk/

Misc Graphics:
Homepage desk fruits, banana & apple (images/homepage/monitor_bg.png):
http://www.iconmonsters.com/icon-packs/food-drinks/paradise-fruit

Apple Mac monitor (images/homepage/monitor_bg.png):
http://www.flatpanelshd.com/pictures/appleledcinema-1l.jpg

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Featured desk 2 (images/homepage/ffeatured_desks/2.jpg):
http://pinnacle-interiorsystems.co.uk/var/ag/13580/125179-01.jpg

Scripts:
Codeigniter (PHP framework) V2.1 (All folders within desk_hub_mac/windows sources folder excluding folders: scripts, images, desk_hub_uploads, application/controllers, application/views, application/models):
http://codeigniter.com/

JQuery Cycle Plugin (Animation plugin used on homepage), (scripts/js/jquery.cycle.all.js):
http://jquery.malsup.com/cycle/

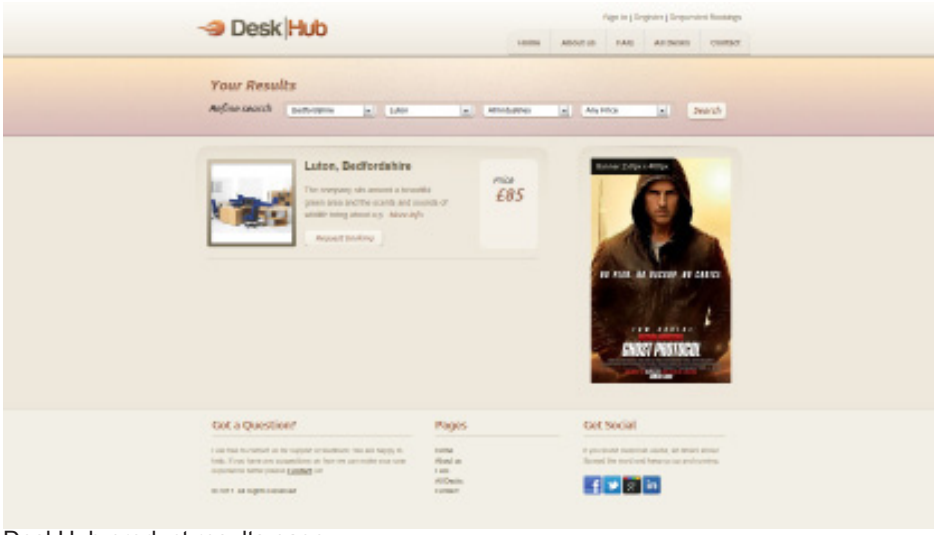
JQuery ScrollTo Plugin (Jquery Plugin used on FAQ page), (scripts/js/jquery.scrollTo-1.4.2-min.js):
http://archive.plugins.jquery.com/project/ScrollTo

JQuery FancyBox Plugin (Product Page gallery), (scripts/js/fancy_box_init.js, scripts/js/jquery.fancybox-1.3.4.pack.js, scripts/js/jquery.mousewheel-3.0.4.pack.js):
http://archive.plugins.jquery.com/project/ScrollTo

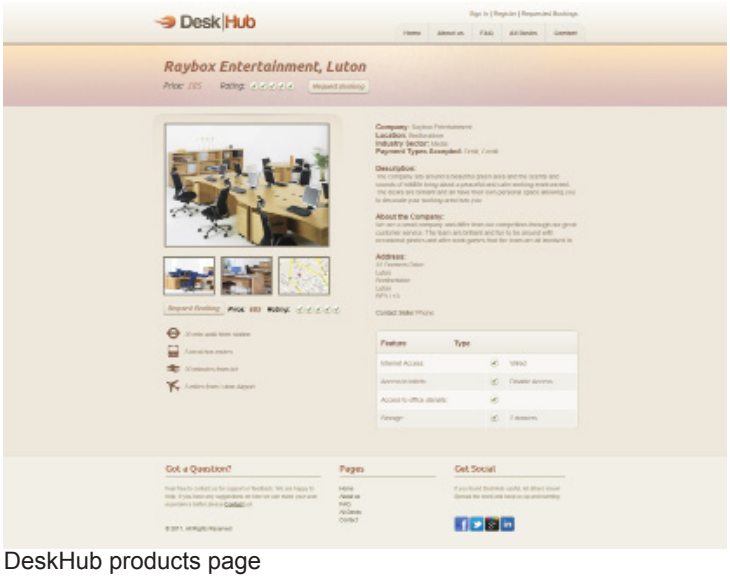
Other:
Ubuntu font family (font/Ubuntu):
http://font.ubuntu.com
Lecture notes
E-business “Paul Beynon-Davies

Appendix

DeskHub homepage



DeskHub product results page

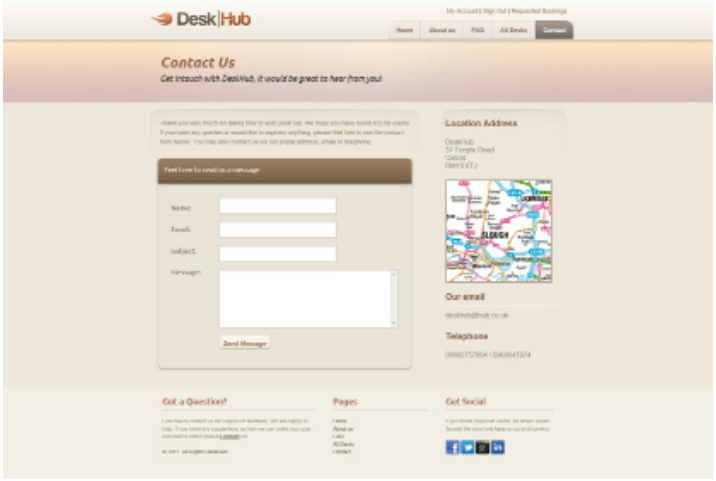


DeskHub products page

DeshHub request bookings page

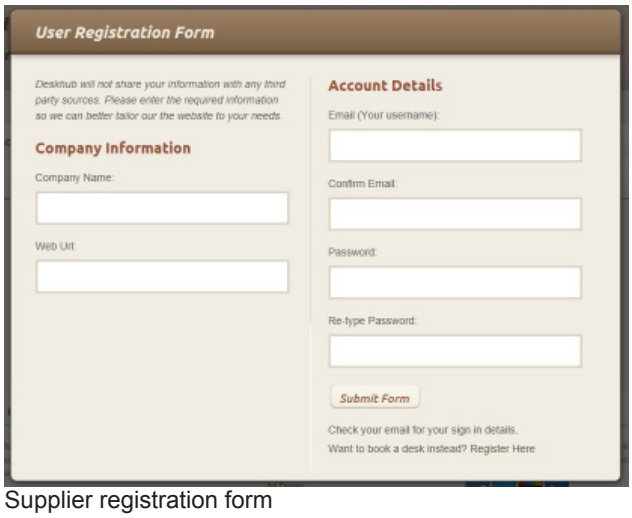
DeskHub request confirmation page

DeskHub about us page

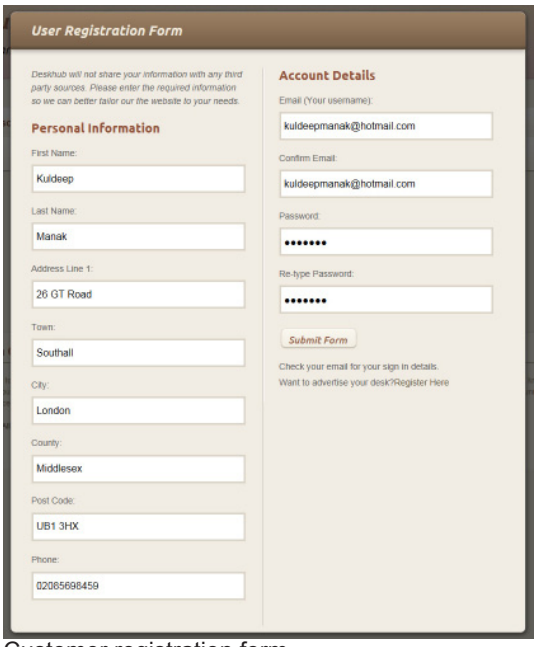


DeskHub contact us page

DeskHub FAQs page

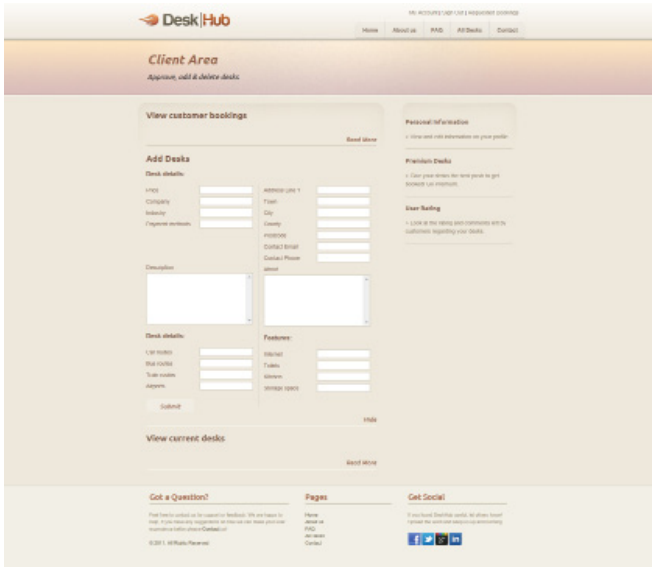


Supplier registration form

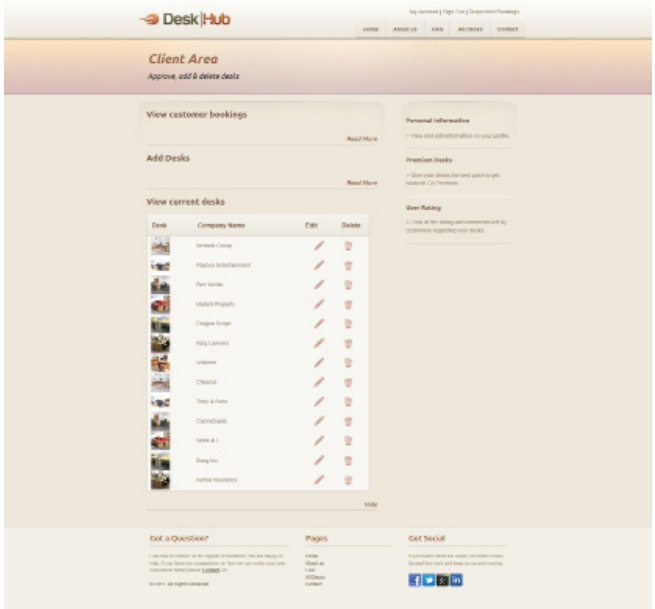


Customer registration form

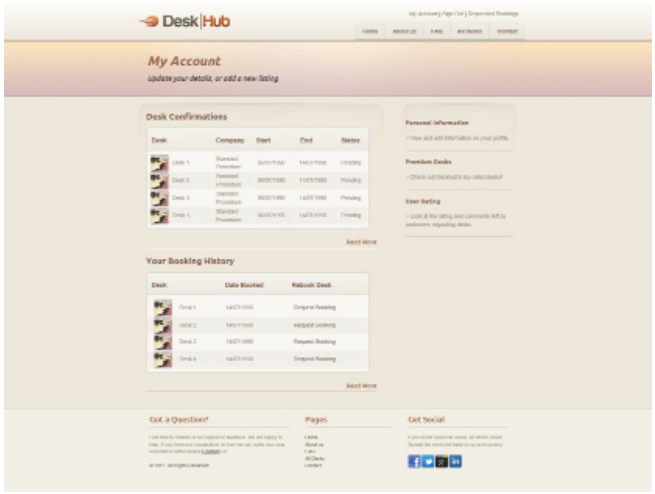
Supplier area - approval interface



Supplier area - add new desk interface

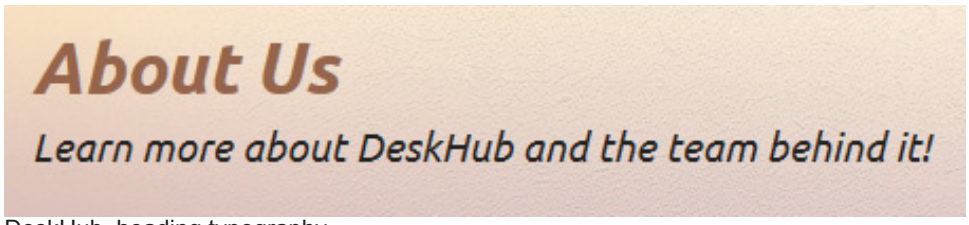


Supplier area - current desks interface

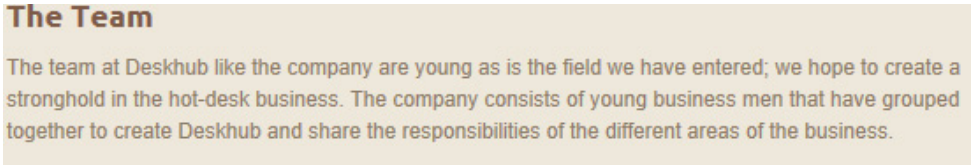


Customer area

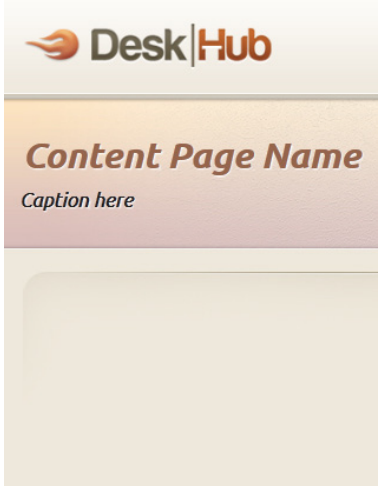
DeskHub logo



DeskHub heading typography



DeskHub text typography



Deskhub colour theme

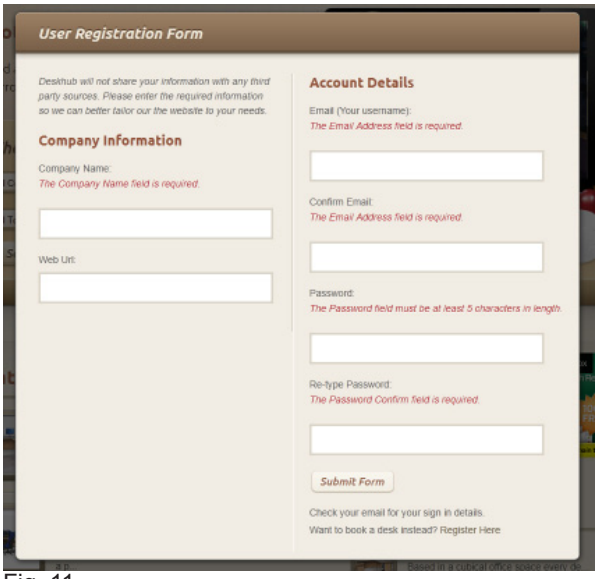


Fig. 11

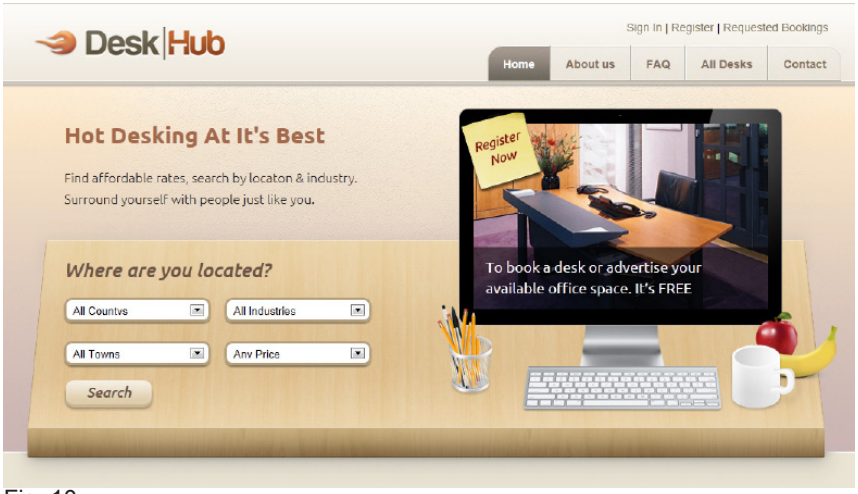
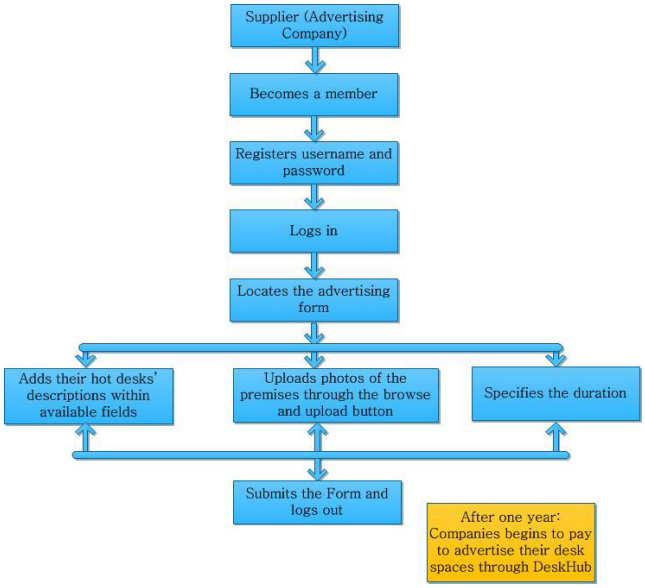
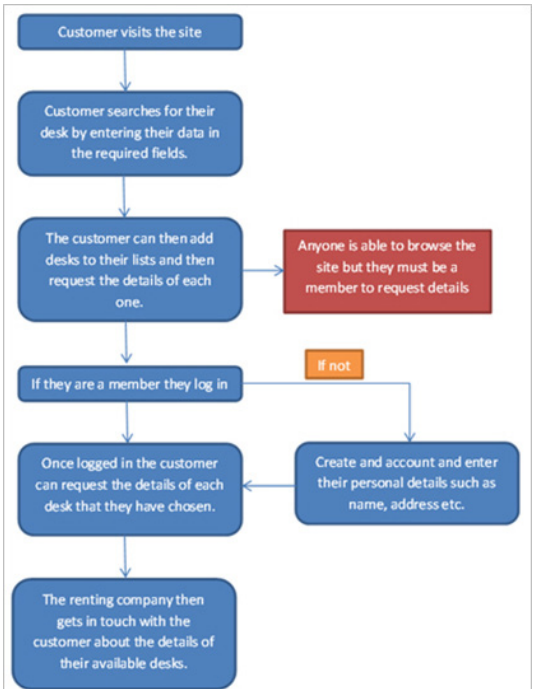


Fig. 10

Feature	Type
Internet Access:	Broadband 4mbps ethernet & wired
Power sockets:	4x sockets
Access to toilets:	Every floor homie
Access to office utensils:	Every floor homie

DeskHub table layout





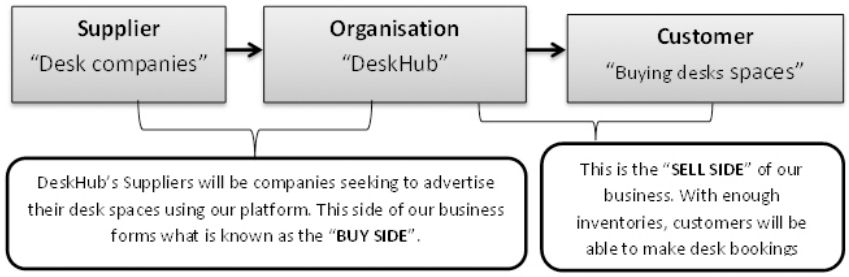


Fig. 2

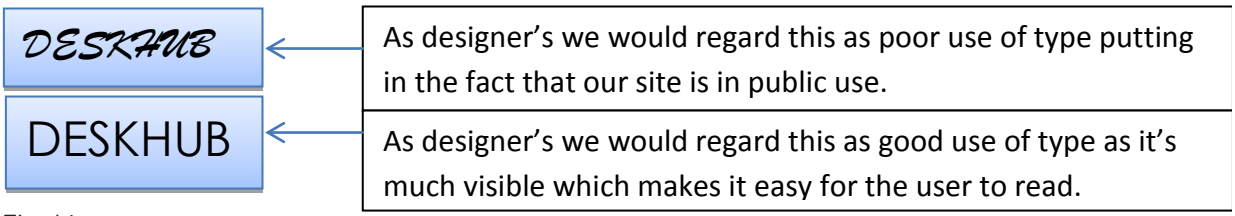


Fig. 14

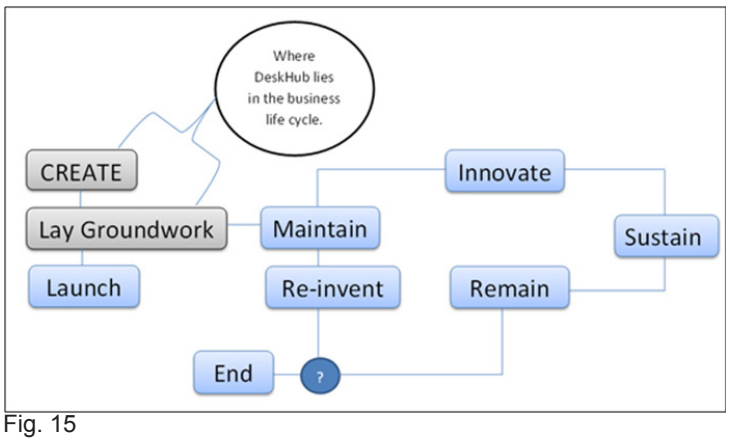


Fig. 15

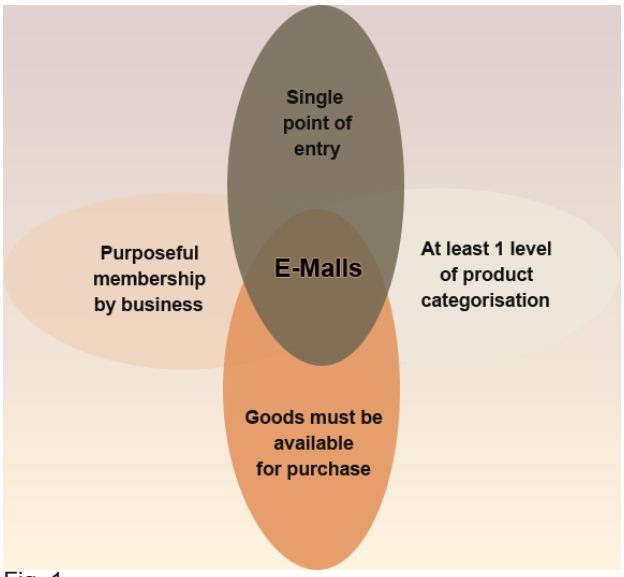


Fig. 1

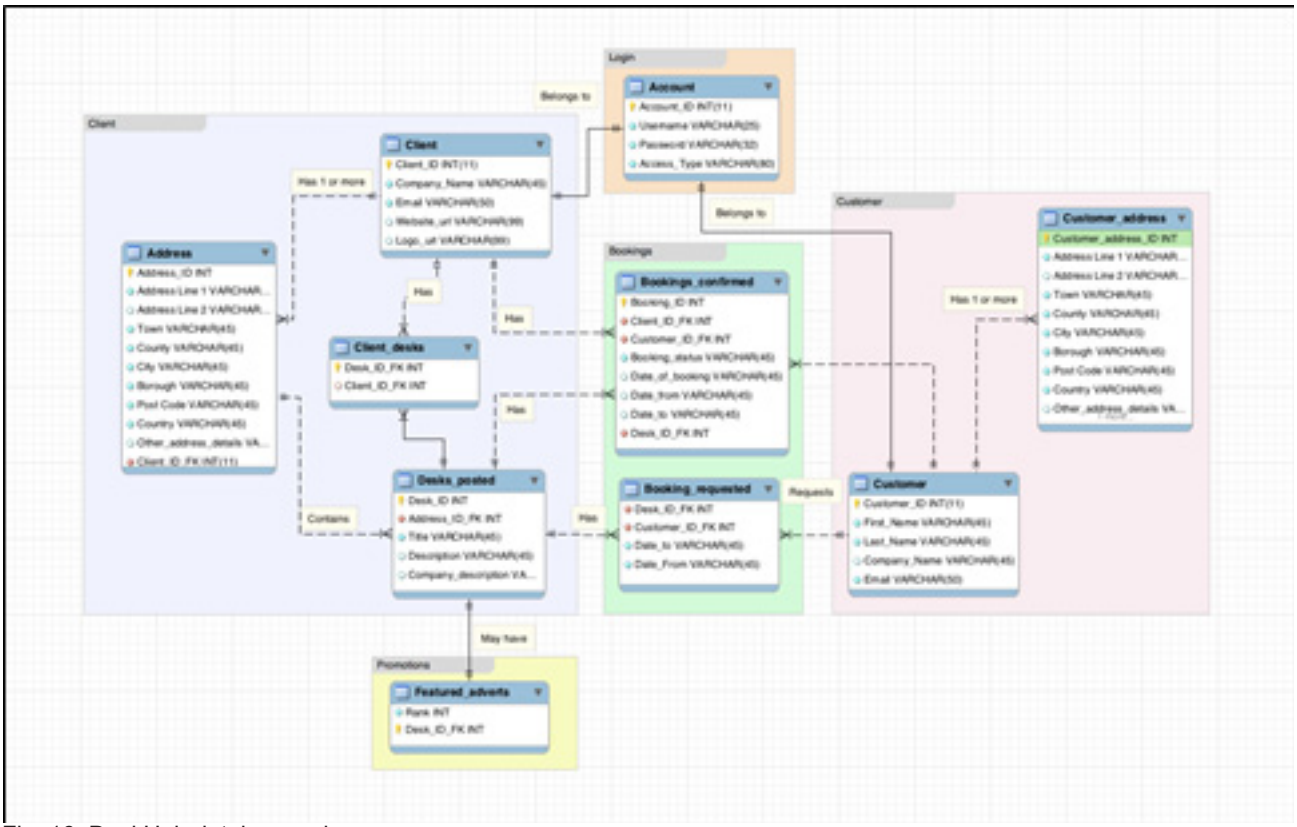


Fig. 16: DeskHub database schema