

EFFECTIVE SIGNAGE SYSTEM

Thesis submitted in partial fulfilment
of the requirements for the degree of

Bachelor of Technology

in

Industrial Design

by

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May 2014

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CERTIFICATE

This is to certify that the thesis titled “**Effective Signage System**” is submitted by **Amlan Abhinav** (Roll No. 110ID0582) in partial fulfilment of the requirements for the award of Bachelor of Technology degree in Industrial Design at the National Institute of Technology, Rourkela is an authentic work carried out by him under my supervision and guidance.

To the best of my knowledge, the matter embodied in the thesis has not been submitted to any other University/Institute for the award of any Degree or Diploma.

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ACKNOWLEDGEMENT

I extend my deep sense of indebtedness and gratitude to Prof. Dhananjay Singh Bisht for kindly providing me an opportunity to work under his supervision and guidance. During this period he played the crucial role in the process. Regarding my research he advised me to harmonise theory applications. He showed me different ways to approach a research problem and the need to be persistent to accomplish any goal. His keen interest, invaluable guidance, immense help has helped me for the successful completion of the project.

I am thankful to my faculties Prof. B.B Biswal, Dr. M.R Khan and Prof. B.B.V.L Deepak for their moral support and valuable suggestions regarding the research work. I am also thankful to Central library, NIT Rourkela for different resources available for development of my research work.

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ABSTRACT

In this modern growing world, communication fills an important part of our life. Not only used to convey our feelings, communications also play a vital role in our day to day activities. One of them is “SIGNAGE SYSTEM”. These are visually oriented communication and information system consisting of maps, signs, arrows, colour coding systems, gestures, pictograms and different typographic elements. These generally differ from other methods of information because they are used typically as a guide for people’s passage through the physical world. Moreover being a system, it is a collection of correlated signs used with a coherent design and purpose for e.g.:- road signs on a highway, overhead signs in airport, signs of hospital and college, different department Signs in hospital or college. Thus understanding the importance of signage system, it is important that the coherency of the system should be intact and harnessed for better results. This is the motivating factor towards a world of effective signage system, where the signs of a particular system convey information with utmost ease and more over the coherency is maintained.

Key words: - Signage system, maps, signs, arrows, gestures, typographic elements, coherent design

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CHAPTER 1

INTRODUCTION

A signage system ought to incorporate strategies, technique, brand, picture and structural planning to convey our message, directing our crowd by lucidly complimenting with our offices. While any gathering of associated signs might be viewed as a signage framework, the term is ordinarily used to allude to a gathering of signs with a lucid plan and reason. Much of the time, noteworthy exertion is put into making a shrewd presentation for a sign that considers experimental information about people's touchy proficiencies to typefaces and shades. Numerous variables impact the advancement of a specific signage framework which are frequently acknowledged and put to practice when creating the signage framework. In this way a powerful signage framework might be a mode of data as well as fills in as a coherent system with our surroundings further disentangling other criteria of data.

1.1. History:-

The French word *enseigne* signifies its fundamental association with what is known as banner in English , and in France, standards not rarely took the spot of signs or sign sheets in the Middle Ages Signs, on the other hand, are best known as painted or cut commercials for shops, hotels, and so forth. They are one of different techniques symbolically utilized from time immemorial for calling consideration freely to the spot to which they allude.

The old Egyptians and Romans were known to do the utilization signs. In antiquated Rome, from stone or terracotta, signboards were normally made and Greeks were known to have utilized the profits of signs additionally. Numerous Roman illustrations are ensured, around them the generally-perceived shrubbery to demonstrate a bar, from which is inferred the axiom "Great wine needs no shrub". In a few cases, for example, the three wads of pawnbrokers, or the bramble, certain signs turned into the recognizable proof of specific exchanges and some of these later even advanced into trademarks. Different signs could be gathered as per their different inceptions. In this manner, at an early period, the cross or other indication of a religious character was utilized to get the consideration of Christians, though the indication of the sun or the moon might serve the same reason for agnostics.

In 1389, King Richard II of England forced landlords to develop sigils simply outside their premises. The engraving expressed "Whosoever should brew beer in the town with proposition of offering it must hang out a sign; else he might relinquish his lager". This was in place make them effectively observable to passing auditors for the nature of the lager they served (throughout this period, drinking water was not generally fit for drinking and beer was the normal substitution). Later, the utilization of the layers of emblems or arms of respectable families got well known. These might be portrayed by the individuals without attention of the dialect of heraldry, and hence such signs as the Red Lion, the Green Dragon, and so forth, have gotten well known, particularly as signs for the pubs.

Expansive towns where numerous individuals were included the same exchange, and particularly, as was frequently the case, where these amassed basically in the same road, straightforward indications of an exchange signs did not give sufficient separation and much increase in exchange. Hence a mixture of supports started to be; now and then the dealer utilized a rebus on his own name (e.g. two cocks for the name of Cox); now and then he received a figure of a creature or other item, or representation of a renowned individual, which he recognized liable to pull in consideration. Different signs utilized the normal affiliation of two divergent items, which (separated from those speaking to a rebus) were in a few cases just an eccentric fusion, however in others emerged from a prevalent confusion of the sign itself (e.g. the blending of the leg and star may have started in a representation of the emblem of the tie), or from defilement in prevalent discourse (e.g. the blending goat and compasses is said by some to be a debasement of God incorporates).

Although the utilization of signs was by and large relied on upon the clients wish, publicans were on an alternate balance from different brokers in this admiration. As right on time as the fourteenth century there was a law in England driving them to display signs, with respect to in 1393 the indictment of a publican for not doing so is recorded. In France even proclamations were compelled to meet the same end in 1567 and 1577.

Since the object of sign sheets was to addition open fascination, they were regularly of an engaging character. Not just were the signs themselves enormous and now and then of incredible creative ability (particularly in the sixteenth and seventeenth hundreds of years, when they arrived at their most terrific stage) yet the posts or metal hangings launching from the houses over the road, from which the signs were hanged, were frequently extravagantly outlined, and numerous delightful illustrations of fashioned-iron backings might be discovered still both in England and mainland Europe.

The signs were a conspicuous characteristic of the lanes of London at this period. Be that as it may here and in other extensive towns they turned into a peril and an aggravation in the tight ways. Effectively in 1669 an imperial request had been coordinated in France against the over the top size of sign sheets and their projection too far over the roads. In Paris in 1761 and in London something like 1762-1773, laws were presented which slowly urged sign sheets to be evacuated or settled level against the divider.

Generally they just made due in association with hotels, for which a percentage of the best specialists of the time painted sign prepares to leave, normally speaking to the name of the hotel. With the steady annulment of sign sheets, the numbering of houses started to be presented in the early eighteenth century in London. It had been endeavored in Paris as promptly as 1512, and had ended up practically all inclusive by the end of the eighteenth century, however not implemented until 1805. An alternate paramount variable was that throughout the Middle Ages an expansive rate of the populace might have been unskilled along these lines pictures were more valuable than words as a method for distinguishing an open house. Hence there was frequently no motivation to compose the stronghold's name on the sign and hotels opened without a formal composed name—the name being determined

later from the outline on general society house's sign. In this sense, a pub sign could be considered an early illustration of visual marking.

Throughout the nineteenth century, a few specialists worked in the painting of signboards, for example, the Austro-Hungarian craftsman Demeter Laccataris. Pending this advancement, houses which carried on exchange around evening time (e.g. espresso houses, warehouses, and so on.) had different particular courses of action of lights, regardless these get by to some degree, as on account of specialists dispensaries and physicists shops.

Benefit signs were basic on retail stores throughout the twentieth century, despite the fact that a significant number of them are no more present, or have gotten relinquished phantom signs.

With a 100+ year history, one of the best known signs in the USA is the Times Square Ball, placed at One Times Square, New York City. It has been featured in countless movies and is used for the New Year's Eve ball-drop ceremonies [1].

1.2. Functions of sign:-

The fundamental motivation behind a signs is to impart, to pass on data such that its collector can settle on cognitive choices focused around the data gave. By and large, signs might be arranged into the accompanying capacities:

- (a) Information: signs giving data about administrations and offices, e.g., maps, registries, directions for utilization, and so forth.
- (b) Direction: signs prompting administrations, offices, practical spaces and key territories, e.g., sign posts, directional shafts, and so forth.
- (c) Identification: signs showing administrations and offices, e.g., room names & numbers, can signs, number of carpets, and so forth.
- (d) Safety and Regulatory: signs giving cautioning or security guidelines, e.g., cautioning signs, movement signs, passageway signs, standards & regulations, and so on.

1.3. Usage of symbols

Natural Graphics is the calling answerable for making the configuration of signs and symbols. The signs help to pass on particular data. The state of signs can encourage make an impression on the crowd and can also either structure a group of decides that ought to be taken after when creating indications of a comparable classification or they can express passionate ties, for example, the state of a Coca Cola container utilized financially to distinguish a brand. Specific shapes may fluctuate from society to society and in diverse parts of the world. Norms set up by distinctive nations can likewise oblige signage of particular shapes.

A case of the utilization of shape to pass on diverse implications might be found in transportation signs where rectangular signs are regularly used to depict general data to a crowd of people. They tell where something is, the thing that something is, and comparable data.

Conversely, a round sign speaks to a guideline that must be emulated. Both the compulsory and the forbiddance signs give directions that can't be overlooked. A triangle speaks to a

cautioning sign. This is utilized to pass on peril or alert. It can likewise give data yet its basic role it to rapidly let you know to be mindful and cautious.

Outside of the gauges commands signage frameworks, for example, ADA Accessibility signage and transportation signage, the larger part of signs are allowed to utilize shape, shade, typography, material and 3-d structure to express numerous qualities from character to informing to brand or spot distinguishment. Think about the mind boggling spot based distinguishment of the well-known Las Vegas sign above. At the point when signs are utilized as a part of plans to express a feeling of spot, this is alluded to as Placemaking or Branded Environments.

1.4. Sign technologies

Depending on the requirement and human innovation the different type of signage systems are classified are as follows:-

- Aircraft smoke-structured sign (skywriting)
- A-edge sign
- Aircraft towed sign
- Architectural Sign/Way discovering Systems –
A bound together arrangement of signs for a solitary office that support in way discovering and recognizable proof of particular ends of the line inside the office. Signs incorporate building and room ID signs, directional and instructive signs and administrative signs. In the US, all such frameworks must conform to the ADA.
- Banner sign
- Billboard
- Channel letters sign and many more [1].

1.5. Some examples of signage system:-



Fig.1.5.1. A neon sign. [1]



Fig.1.5.2. A bilingual dashboard. [1]



Fig.1.5.3. A sign outside an ice-cream shop. [1]

1.6. Problem Statement:-

With the advent of technology, in this modern world we have a varied type of signage system. For a same purpose even signage systems might be different for two different societies or for a group of people in general considering the factors. For example the signage systems for roadways generally differ from cities to cities depending on factors such as topography etc. Thus generally migrating or travelling people face problems in comprehending a foreign signage system and adaptation thus becomes problematic. Thus it is important that apart from being coherently designed to a particular surrounding a proper signage system must be universally acceptable and easily comprehensible.

1.7. Objective:-

Based on the problem statement the following objectives were framed for this research:-

- To know the importance of signage system.
- To study the human ergonomic factors related to a particular signage system.
- To study about different signage systems and get an overall ideas about the coherency factors taken into consideration.
- To study about different signage systems used for the same purposes and to determine the most ambient system among them.

CHAPTER 2

LITERATURE REVIEW

Based on the study we received literatures on different topics. Literature review is an important phenomenon for any research project. We gain different ideas and a very broad way of thinking about the project by reviewing numerous topics. The search for literature includes various websites, journals and books.

2.1. Development in hospital signage system:-

Given their entangled medicinal phrasings, unending supply of truncations and maze-like activity examples, its no big surprise that complex therapeutic offices frequently cause patients and guests to get lost, baffled and angry. Today's health awareness outline is determined by practicality, new innovations and easy to use-situations. In any case numerous healing facilities use the same fundamental signage frameworks that have been set up for a long time. Be that as it may, there are numerous ranges where health awareness way discovering could be redesigned and enhanced to close the crevice on developments in general clinic outline. New improvements in way finding incorporate the accompanying characteristics and advances:-

2.1.1. Green Design:-

Picking an outline firm that has experience utilizing green items and creation courses of action can keep a wayfinding system from adding to the officially substantial carbon foot shaped impression most healing centres speak to. Case in point, natural administration could be showed by verifying signage and other way finding components fuse these characteristics at whatever point conceivable:

- Paint frameworks that are low-weight, high-volume and water-based;
- Low unstable natural compound paints and sealants;
- Modular items with paper or other recyclable embeds that permit signs to stay undisturbed when being upgraded;
- Energy-efficient lighting through such innovations as light-radiating diodes and sunlight based force sources
- Screws rather than pastes for get together and mounting.

2.1.2. Hand-held Technologies:-

Social insurance offices have been trying different things with handheld units attached to roof-covered modules for inside utilization. These frameworks are preprogramed to different goals along foreordained courses. From an innovation outlook, the same radio-recurrence distinguishing proof (RFID) frameworks that track supplies, quaint little inns work force could be used as an establishment for a guest way finding framework. In one variety, a RFID-based framework utilizes a handheld "light" to enact a marker that gives a sound reaction. Sound signs fizzled in the past on the grounds that they were chiefly focused around

movement recognition initiation and turned into an annoyance. Nonetheless, this new innovation, which is pointed first at the outwardly weakened, permits just those leading to initiate the gadgets. Different offices are inquiring about shrewd Polaroid telephones that read information attached to a URL address and raise a picture or content keyed to a choice point. This will pick up footing as telephones get to be more astute, speedier and are furnished with all inclusive stages.

2.1.3. High-Definition (HD) displays:-

Maybe no wayfinding engineering is more easy to use yet underutilized in health awareness offices than high-definition (HD) shows. Fluid gem shows (Lcds) and plasma screens are restricted just by the product that is accessible and the creator's creative ability. Case in point, a TV could be utilized within a crisis room anteroom to help guests take a break while a part-screen perspective might be utilized to pass on data, for example, Health Insurance Portability and Accountability Act approaches, triage proclamations, separate charging arrangements and any possible data that might be valuable to the crowd. Utilized as welcome focuses, HD presentations can give the time and climate, a rundown of day by day occasions, indexes, floor arrangements, administration line advancements and features set up by the advertising division. HD units additionally could be butted side by side as transom-mounted bunches that use symbols, logos, bright content and shafts for directional needs. LCD and plasma screens could be utilized within cafeterias to rundown nourishment decisions, costs and pictures of alluringly plated suppers. By joining this with a touchscreen stand, dietary data might be supplied on interest, upgraded for the suitable supper and menu with no extra cost. HD innovation additionally is constantly utilized alongside life-wellbeing arrangements to alarm patients and parental figures to crises. At the push of a catch, all screens around an office might be redesigned with crisis climate conditions or can give bearings throughout a cataclysmic occasion. Moreover, a few organizations offer a standard screen to mount alongside the entryway of meeting rooms, classrooms and meeting rooms to show a calendar of occasions that could be upgraded from an incorporated workstation.



Fig.2.1.3.1. HD display. [2]

2.1.4. Limited English proficiency (LEP) and limited reading ability:-

Essentially most individuals are very little proficient in English dialect and consequently confront issues when the data is in immaculate English dialect. To cure this, numerous health awareness associations made an interpretation of their signage into the dialects most often experienced by the association. An alternate alternative is the utilization of Universal Signage, which utilizes images rather than words. Such pictograms get to be progressively paramount as offices advance to serve more than two overwhelming dialects on the grounds that signs delineating four or more dialects rapidly get to be outwardly overpowering and unreasonable. This direction ought to likewise be connected to composed correspondences, telephone interpretation administrations and staff preparing. These symbols supplement other all-inclusive symbology frameworks, for example, Department of Transportation models and Occupational Safety and Health Administration-obliged symbols.



Fig.2.1.4.1. Universal hospital symbols. [2]

2.1.5. Maps and user guides:-

Fewer than a large portion of all clinics at present give fundamental client aides and maps to support in wayfinding. Nonetheless, they can give important aid to patients and guests and are quick turning into a need. Wellbeing offices experts ought to remember the accompanying:-

- Is wayfinding data given out at the time of errand or is an update sufficient? Notwithstanding time and division name, the flyer or pamphlet ought to run individuals to a particular stopping territory, a designated entryway and a particular work area.
- Overly perplexing or dated maps are more awful than no maps. For example, one wellbeing office utilized workstation produced drawings that demonstrated each room and entryway, bringing about a level of multifaceted nature those even befuddled insiders.
- Which things need to be in different dialects? In the event that signs impart in more than one dialect, steady material ought to as well.
- Terminology in print materials must be predictable both inside itself and with signs. Patients can't be advised to go to "Outpatient Registration" and afterward be required to know they ought to utilize the passage marked "Day Surgery"

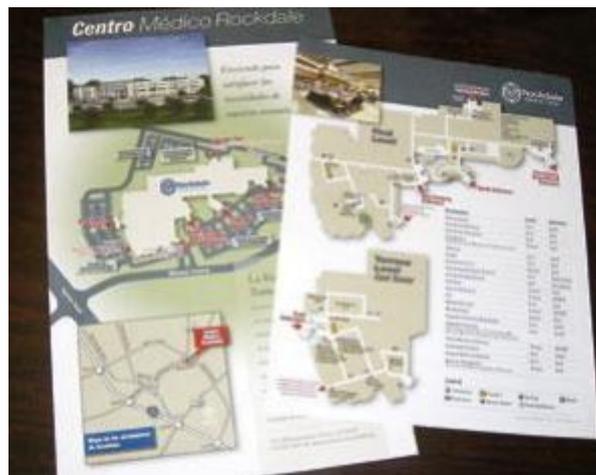


Fig.2.1.5.1. Maps and user guides. [2]

2.1.6 Touch-screen kiosk units:-

Electronic stands are moving great past the straightforward catalogues of the past and are currently getting to be data frameworks that connection departmental data with wayfinding and can likewise be utilized to pass on contributor data, doctor referral projects, maps and even give a virtual guided tour along decided ahead of time courses to particular ends. Most booth-based frameworks are additionally incorporated into the social insurance office's Web website, permitting a consistent move between the virtual and physical planets.

Alternatives accessible for booths incorporate touch screens, intelligent maps, printers and multilingual sound. The stands additionally could be housed in work areas and dividers and in unsupported units. These units use fittings and programming with which most IT divisions are commonplace and might be interfaced and remotely upgraded. Programming organizations have additionally created institutionalized stages to drive stand plan and can give complex inquiry projects to wayfinding. A typical appeal is for hard duplicates of the data exhibited on screen. That might be effortlessly fulfilled, however offices experts ought to be ready to keep the printer supplied with paper, ink and have a junk can close by in the event that children use it to divert themselves.



Fig.2.1.6.1. Touch-screen kiosk units. [2]

2.1.7 Online information:-

Once more, its paramount to verify the data and wording is reliable with data on signage and in print materials. For every goal, a Web webpage ought to show patients and guests where to go, what stopping zone to utilize, what way to enter and the hours the passageway will be open. Progressively, individuals use online administrations to get where they're going, so give a road address instead of a focal mail drop or post office box.

Clinic Web destinations additionally need to give locations of off-webpage centres, critical consideration focuses and partnered administrations. Sites additionally could be intended to be intelligent, permitting the client to span over a site map where a photograph of the building, building name, location and its capacity pop up to help guests get acquainted with complex grounds settings. Similarly as with any open device, forethought ought not be constrained to the introductory launch additionally to staying up with the latest.

On the off chance that online apparatuses are joined to touch engineering in a clinic booth, wellbeing offices experts need to remember that a touch-screen interface does not work like a common machine interface. Sites accessible at on location stands must be intended to be benevolent to the touch of the finger versus the accuracy of a mouse or roller ball, and draw-down menus and drag-and-click things ought to be maintained a strategic distance from.

2.2. Interactive Digital Signage in a Shopping Mall:-

These days, computerized signage is all around. It has turned into a prevalent promoting apparatus which can give ongoing data, publicizing and messages in rich interactive media arrangements to draw in customers. Intelligent computerized signage permits shoppers to communicate with the signage to upgrade client engagement and in-store deals. Around all open spots, shopping centers are one of the perfect venues to use intuitive advanced signage.

2.2.1. Application Requirements:-

Since this intuitive advanced signage was to be conveyed in a shopping centre where it is gathered and loud, the computerized signage screen must be extensive enough, with great picture quality, to draw individuals' consideration. Additionally, quick, yet faultless touch reactions were likewise needed to assemble a solid intelligent interface. Ultimately, the signage must be rough enough to withstand steady utilize and intelligence. In this way, unwavering quality and life span was the key.

2.2.2. Solutions:-

Advantech DSD-3032 and ARK-Ds520 were chosen for the provision. DSD-3032 gives 32" huge organization screens supporting 1366 x768(hd) determination and unparalleled picture quality with configurable I/O. Not at all like business evaluation screens, the 32" computerized screen is planned with a metal edge and is fan less. Besides, DSD-3032 is furnished with optical multi-touch result which gives correct 2-point touch with 4 mm safety glass and hostile to-glare characteristic. Its flexible indicator interface including HDMI, DVI, and VGA offers clients an extensive variety of sign alternatives. The screen likewise gives RS-232 and RS-485 for OSD (On Screen Display) remote control. At last, DSD-3032 is completely incorporated with ARK-Ds520 giving our client an aggregate answer for their advanced signage provisions.



Fig.2.2.2.1. An interactive digital system. [3]

2.2.3. Benefits:-

- Optical multi-touch solution
- Wide viewing angle of 176°/176°
- Versatile signal interfaces of HDMI/DVI/VGA
- Wall mount solution with 200 x 200 mm



Fig.2.2.3.1. Background structure of a digital signage system. [3]

CHAPTER 3

METHODOLOGY

On the basis of our objective and the literature we have studied we will be firstly considering the human ergonomic factors for the development of a specific signage system. With different types of signage system for a single definition a survey is also to be carried out to regulate the existing system and have a more generic signage system. Emphasis is also given to the newly developed digital signage system which also uses gestures for signage system. A detail survey is to be done to decide the apt gesture for a particular system.

3.1. Human Ergonomic Factors:-

The sole purpose of a signage system is to educate the human beings about a particular section which it is targeting. Thus for the development of every signage system there is always a concern for the Human ergonomic factors some of which are enlisted below.

3.1.1. Visibility:-

The sign ought to be estimated fittingly for the survey separation. By and large we require an inch of letter tallness for each ten (10) feet of survey separation. The sign ought to likewise be put in an area with most extreme introduction to the intended interest group.

3.1.2. Readability:-

The sign ought to be composed in a way that ought to pass on the planned message. Decisive words and expressions ought to be associated, underscored with bigger letters, strong sort styles and if vital with extra colours.

3.1.3. Noticeability:-

The sign ought to consolidate some outline components that will bail it emerge notably fit as a fiddle. Shade contrast, variably segments, movement, Uniqueness of outline and/or subconscious fascination can serve to make plan a sign more recognizable.

3.1.4. Legibility:-

Sort style creation is basic to the viability of a sign. The best possible textual style ought to pass on the wanted picture without relinquishing the capability to recognize distinctive letters. Numerous script and unique typestyles are here and there troublesome to peruse, particularly acknowledging the separation.

3.1.5. Use of proper sign materials:-

Depending upon the age factor of the sign it uses materials some of which are enlisted below:-

- **Standard Calendered Vinyl**

As a compelling answer for most provisional open air or lasting result indoor signage, standard calender vinyl is accessible in a collection of colors and are regularly evaluated for an outside life of 3-5 years.

- **Specialty Vinyl**

Specialty vinyl enables the achievement of a distinctive image. Durability varies greatly

- **Fabric**

Digitally printed fabrics are generally new to the sign business, and are making a sprinkle when joined together with the utilization of computerized engineering. Fabrics for pennants, overhangs, banners and compelling artwork, including canvases, are accessible. The utilization for printed fabrics are essentially interminable.

- **Wind Mesh**

Wind cross section is created much like window for every; made with minor openings in the fabric. These openings permit air to travel through the material, essentially disposing of the wind harm that is frequently connected with customary standards. The essential utilization for wind cross section are road pennants, building wraps and huge outer surface provisions. Since the material is transparent, wind network flags work well in storefront provisions and as room dividers or screens.

Corrugated Plastic

A fit, yet conservative sign material, the essential utilization for ridged plastic is makeshift signage. It might be utilized for indoor signage; notwithstanding, different plastics, for example, PVC or acrylic are more strong and undertaking a superior picture.

- **Polystyrene**

Polystyrene is a prudent choice when you require more sturdiness than creased plastic, yet presentation worth is not a worry. This material is a strong white plastic that won't mark or wrinkle effortlessly. It will keep going very nearly uncertainly inside, and will yellow just after several months outside. The thicker stock is inflexible enough to remained on an easel, which makes it a well known material for course show cards. More slender stock is suitable for signs that need to travel every now and again, as it is adaptable enough to be moved and set inside a transportation tube or tradeshow show canister.

- **Foam PVC**

Froth PVC is perfect for utilization in changeless indoor requisitions that require an upscale presentation. It is not prescribed for outside signage.

- **Foam Board**

Utilized fundamentally for transient-provisions, structure board is lightweight and inflexible, settling on it a brilliant decision for show cards. It is to a degree weak and harms effortlessly if not took care of deliberately. Froth board offers an amazingly smooth surface that covers well, settling on it a generally adequate decision mounting digitally printed computerized colour representation.

- **Acrylic**

Acrylic is a strong material suited for very nearly any sign requisition. Inside, it gives the upscale look requested by picture-cognizant customers. Outside, it offers the strength and tolerance required for changeless provisions.

- **Polycarbonate**

Polycarbonates, for example, Lexan, are clear shatterproof plastics that give more toughness and more adaptability than traditional acrylic plastics. They are broadly utilized for outside sign faces within regions that are liable to vandalism. Polycarbonates are likewise utilized for light box illustrations.

- **MDO Wood**

Our marine evaluation plywood (MDO) will withstand the components. It will keep going a few years outside and is solid enough to serve as an unsupported sign. It is perfect for provisions, for example, development site signs, business renting and sandwich board signs.

- **Aluminium**

Aluminum is the ideal material for any lasting outside sign. Aluminum won't rust, and its extreme finish won't drop or peel like other painted materials.

- **Aluminium Composite Materials (ACM)**

ACM consolidates the sturdiness and expert presentation of aluminum with the quality and inflexibility of wood. ACM's are stronger than strong aluminum sheets of comparative thickness, yet not as unmanageable. They are perfect for unattached signs that oblige a more expert presentation than offered with wood [3].

3.2 Survey 1 (distance for optimal visibility):-

Engineering surveys are of prime importance while designing any product. Questionnaires are the main components the surveys which include different kinds of rating scale. Various parameters are obtained by this questionnaire survey. In this survey we have taken into matter the proper sign distance for optimal visibility. This survey results are rounded off conclusions as the average during day time, noon time, evening time and night time for every respective letter height. A group of ten (10) people were taken for this survey.

The three criteria of the survey were:-

- Letter height (in inches)
- Distance for best impact (in feet)
- Maximum reachable distance (in feet)

3.3 Survey 2 (Individual gesture for a smart TV):-

Digital signs are a sub fragment of signage. Computerized Signs are utilized as a part of way finding, spot making, shows, open establishments, advertising and outside publicizing.

Digital signs use advances, for example, LCD, LED and Projection to show substance, for example, computerized pictures, feature, streaming media, and data and might be found openly spaces, transportation frameworks, galleries, stadiums, retail saves, lodgings, restaurants, and corporate structures etc.. Gestures for the back bone of digital systems. But with the system being new to the market for different brands of devices we have different gestures for the same condition. This survey is done for the different gestures related to the various functions of a smart television. The basic functions of the smart TV are analysed with the different gestures used for the same purpose. Some of the functions and the gestures used are enlisted below.

3.3.1 Power on:-

The basic function is to on the television. Some of the gestures used are:-

- Thumbs up (G1)



Fig. 3.3.1.1 Thumbs up.

- Blink of one eye (G2)



Fig.3.3.1.2 Blink of one eye.

- Nod a yes (G3)



Fig.3.3.1.3 Nodding a yes.

- Voice shout (G4)



Fig.3.3.1.4 Voice shout.

3.3.2. Power off:-

The basic function is to off the television. Some of the gestures used are:-

- Thumbs down (G1)



Fig.3.3.2.1 Thumbs down.

- Nod a no (G2)



Fig.3.3.2.2 Nodding a no.

- Namaste gesture(G3)

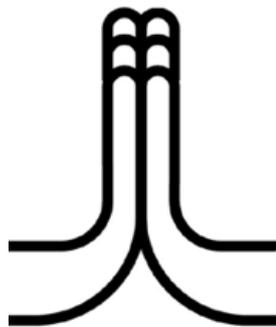


Fig.3.3.2.3. Namaste gesture.

- Voice shout(G4)



Fig.3.3.2.4 Voice shout.

CHAPTER 4

RESULTS AND DISCUSSION

Results were obtained from applied methodology of this research project. A thorough market study is done regarding the two surveys done and the data is rounded off to nearest conclusion thus giving us a brief idea of development of an effective signage system. The arithmetic analysis also gives us an excellent idea regarding the coherency of the signage systems.

4.1. Results for Survey 1:-

In the 1st survey we have tried to get a specific font size for optimal visibility depending upon the eyesight of the viewer. The time of the day taken is noon time for most effective viewing. Moreover a wide sections of people is covered i.e. people with eyesight problems are also taken into consideration and the results are rounded off conclusions giving us a proper average. The ratings of different users were plotted and arithmetic analysis was done and as a result bar graphs were obtained.

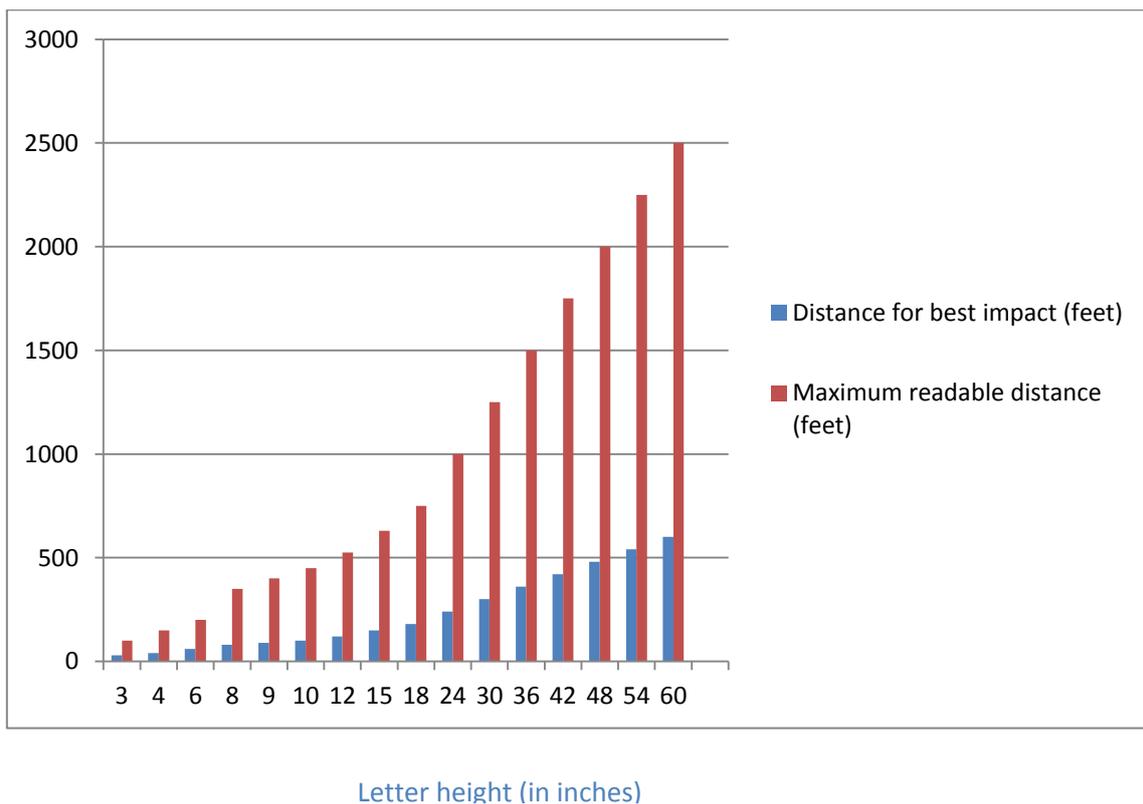
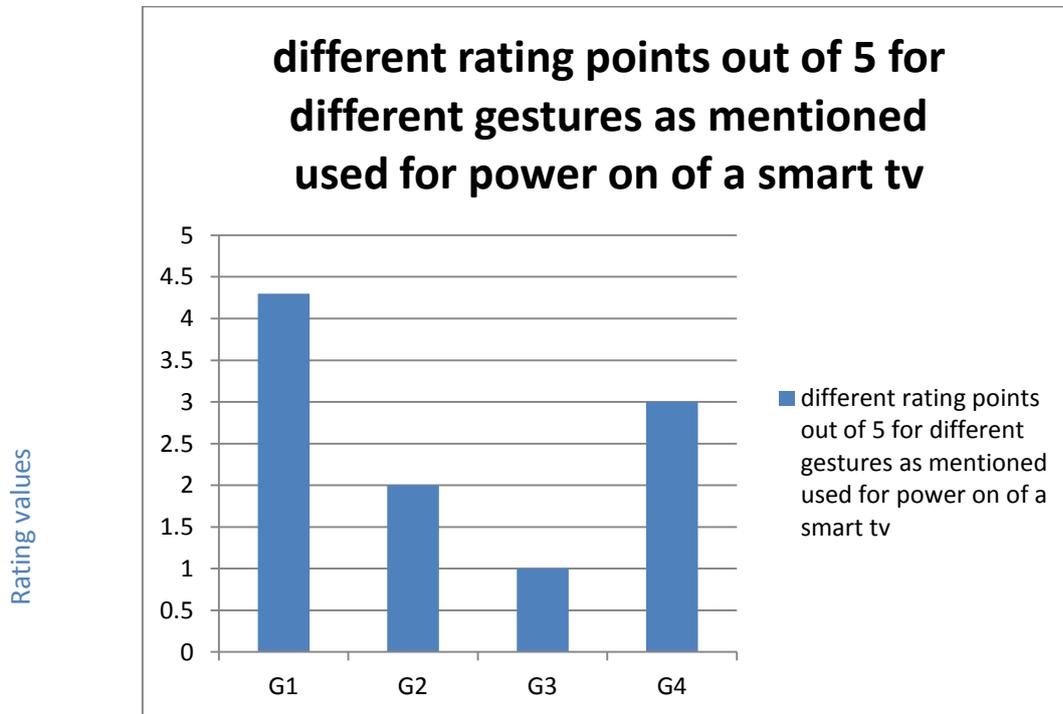


Fig.4.1.1. Bar-graph analysis for optimum readability

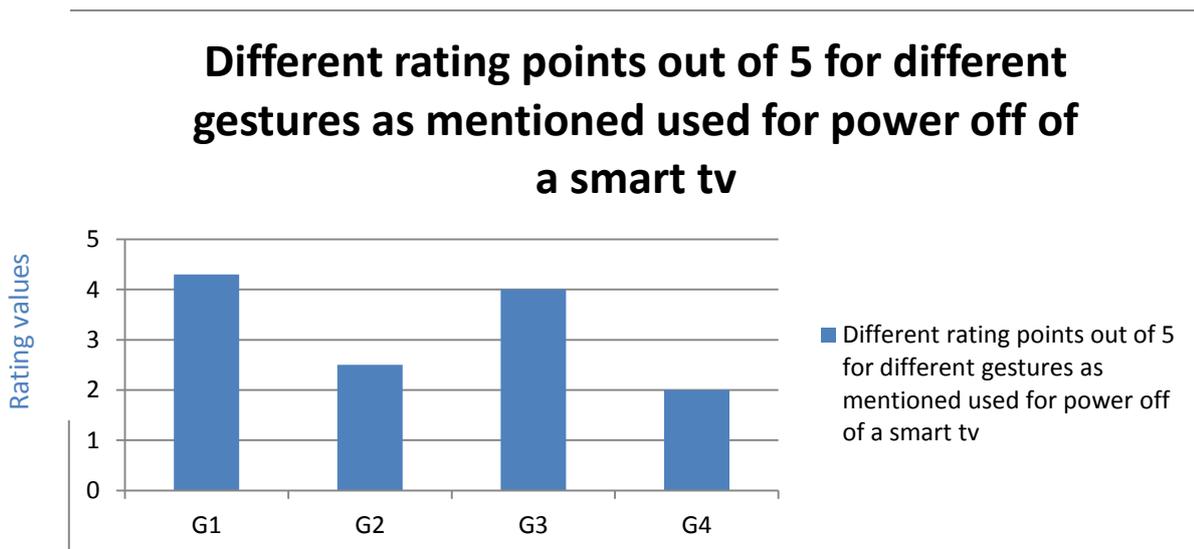
4.2. Results for Survey 2:-

In the second survey we have tried to mathematically grade the gestures used for different operations of a smart TV and get the most appreciable gesture.



Different types of gestures used

Fig.4.2.1. Bar-graph analysis for gestures used to power on a smart TV



Different types of gestures used

Fig.4.2.2. Bar-graph analysis for gestures used to power off a smart TV

4.3. Discussion

In the methodology a total of two surveys were done. The 1st survey gives us information about the optimum distance for readability of the font size depending upon which we can decide the font size of our signage system coherent to our target audience and thus avoid problems of misinterpretation and thus have an efficient signage system.

The second survey is related to gestures which is now the trend in the market nowadays. Be it an atm machine or our simple phone, smart devices have taken its toll already on the existing signage system. Digital signage system is the most interactive system decreasing human to human interaction to a greater extent. So to get a optimum gesture for a specific purpose is too important which is clearly depicted by the two bar graph analysis done to find the effective gestures for basic functions of power on and off of a smart television.

CHAPTER 5

CONCLUSIONS

Since times immemorial signs have been the mode of communication. Going back into the sands of time when language system was not properly developed people used to communicate with each other using signs and symbols. Thus signage system form an integral part of our life coherencing it to become socially equable. From this project we have come to know about application of different factors for an efficient signage system. Human ergonomics forming the bulk of it is a matter of pressing concern which leads to betterment of signs over a period of time. Starting from wall carvings to dashboards to now days digital signage system using gestures, signage system have really travelled along with us the sands of time getting better with every passing stage.

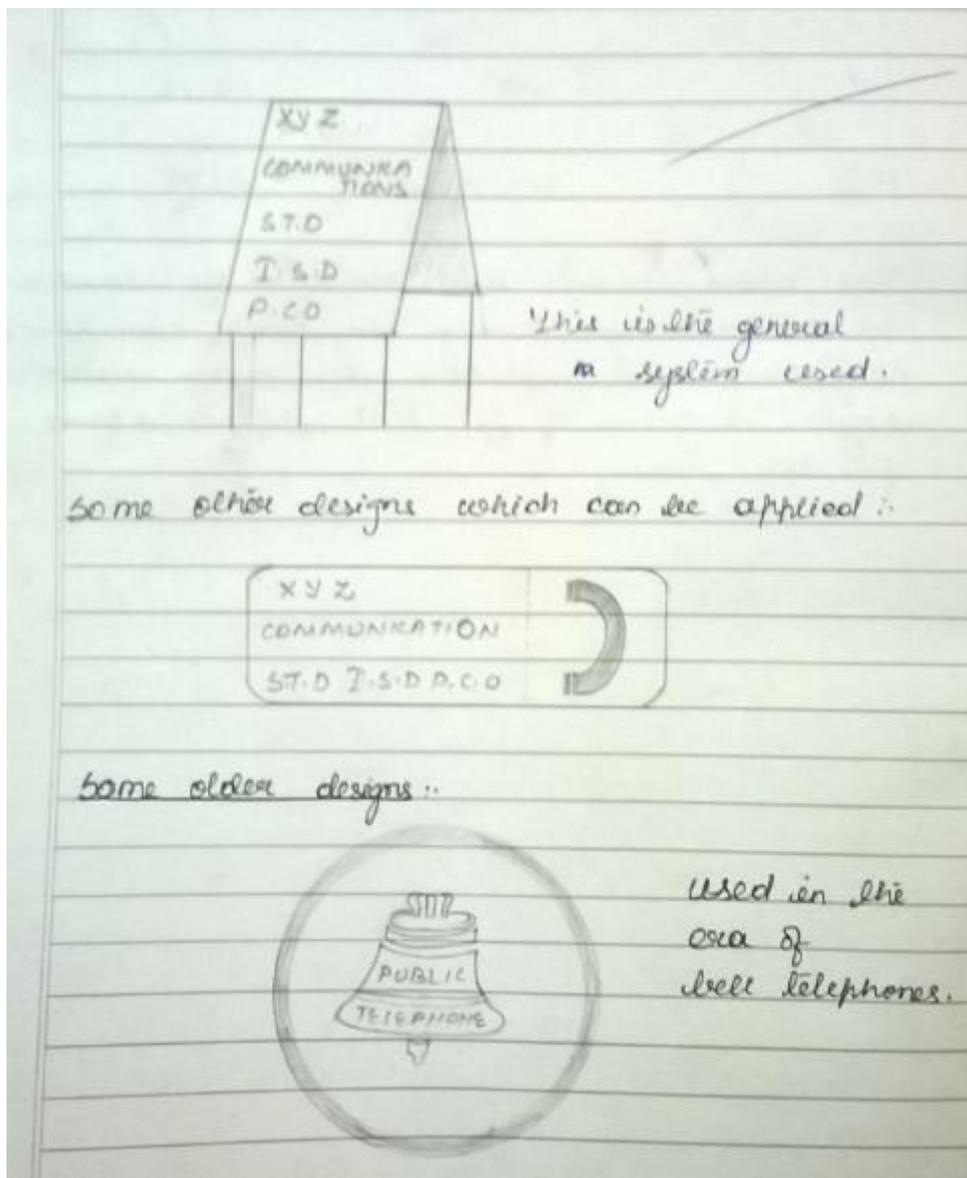


Fig.5.1. Development of dashboard over period of time.

5.1. Scope for future work:-

In this project we have done a detail survey of some signage systems and their efficient development over the period of time. Survey have also been done to find the optimum human ergonomics factors such as the optimum readability distance and selecting the best gesture for a digital signage system. In future the project can be done in different angle such as :-

- Broadening the human ergonomics criteria
- Comparing the development of the signage system to its predecessor
- Trying to develop a standard format for a specific signage system
- Use of proper methods of design

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