

# THE ANALYSIS OF INFOGRAPHIC DESIGN ISSUES IN THE INTERNET ERA

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## Abstract:

As mass information is present in the Internet era, infographics have occupied the media platform. An infographic design is a means of combining an art form of visual communication with a commercial element, and it is also an essential means of statistics and data representation. This article will focus on analysing the application of infographic design in the Internet era, as well as the vital role of information design on the Internet through its nature, understanding its major functions, and discovering the problems of its manifestation in along with a number of case studies, which will help illustrate how designed information graphics can play a bigger role in Internet applications.

**Keywords:** Internet, Internet Applications, Information Graphics (Infographics), Design Issues.

## 1.0 INTRODUCTION

The Internet as defined by (Dennis & Kahn , 2021) is a massive network that links computers all around the world. People can share information and converse via the Internet from any location with an Internet connection whereas the internet applications are the types of applications that rely on the internet to function properly, that is, by using the internet to retrieve, share, and display data from various server systems. There are numerous essential applications for the Internet. The three most essential services offered over the Internet

are e-mail, online browsing, and peer-to-peer services. E-mail, often known as electronic mail, is the most popular and commonly used Internet application as mentioned by (encyclopedia.com, 2021).

According to (Helprocure, 2021) , infographics are defined as visual representations of data, text, and graphics. They are a visually appealing communication channel that lets marketers to communicate complex information in a visually appealing manner. It tells a story or turns usually dull data into a visually appealing image. While infographic design is important in communicating your story, we see far too many examples of design that detract from the content as cited by (French, 2019) . There are a variety of design concerns prevalent in infographics; whether it's too cluttered or too confusing, improper design is one of the most serious dangers to the success of your infographic.

## 1.2 A BRIEF OVERVIEW OF THE INTERNET AGE

From a speech given by Xi Jin Ping, the President of the Republic of China, during the Beijing Forum on Literature and Art in 2014, he said that: "Internet technology and new media have changed the form of literature and art, spawning a large number of new varieties, and have also brought in-depth changes on the concept and practice of literature and art. Due to various developments trends including the digitalization of text, books visualization, as well as networked reading, literature, arts along with social culture are facing major changes" as reported by (Creemers, 2014). Long before computers and the Internet were made available, information only existed in newspapers and books to pass on to the audience. Therefore, it was inconvenient to memorize while obtaining relevant information. Especially when it comes to important information, one could only listen tentatively or read the text over several times, and then rewrite them into a notebook which was time-consuming and labor-intensive. Today, the Internet has penetrated our lives and work, and information has exploded infinitely. People can receive all kinds of information through the Internet whether they are walking on the road or at home, and the Internet era has emerged.

## 1.3 Introduction to internet applications

Internet applications as defined by (Pedamkar, 2020) are the types of applications that rely on the internet to function properly, that is, by using the internet to retrieve, share, and display data from their respective server systems. It can only be accessible with the assistance of the internet, and it is not functioning without it. Electronic devices-based applications, automated digital technology, industrial internet, smartphones-based

applications, smart home-based applications, smart grids, smart city applications, and other key applications are among them.

#### **1.4 Role of internet applications in infographics**

The popularity of infographics has been bolstered by the widespread use of internet applications on smart phones, PCs, and touch tablets. Every day, millions of infographics are published on newspaper and magazine websites, among other places, boosting the platform's strength and appeal. As the number of people using social media sites grows, the quantity of time they spend on them grows as well. People and social networks around the world have reached a new epoch in their interconnectivity. As a result, the social networks as a type of 24-hour brain storming, the increasing prevalence of infographics is due to its ability to respond to the communication pace of the century with its features of presenting complex information in a fast and effective way.

#### **1.4 History of infographics**

Since humans are visual thinkers, it's no wonder that infographics have existed since the dawn of time. Many experts believe that cave paintings were meant to disseminate information about animals and hunting methods, and that these are the earliest examples of infographics. There are also examples of constellation maps and land maps that date back to the prehistoric period.

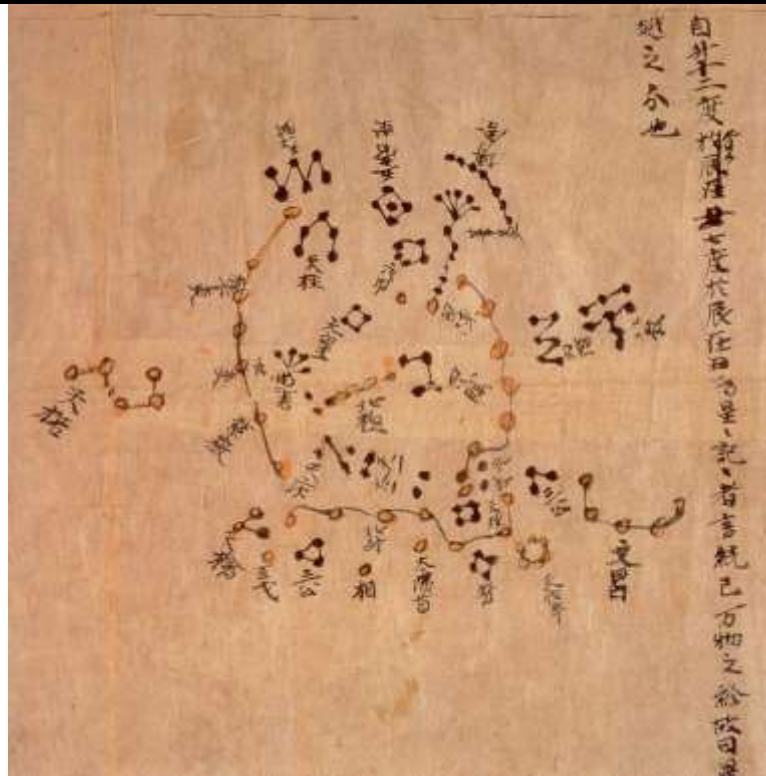


Fig. 1 Shows a star chart from Dunhuang, dated between 600 and 900 AD.

Image Source: <https://rb.gy/owhqud>

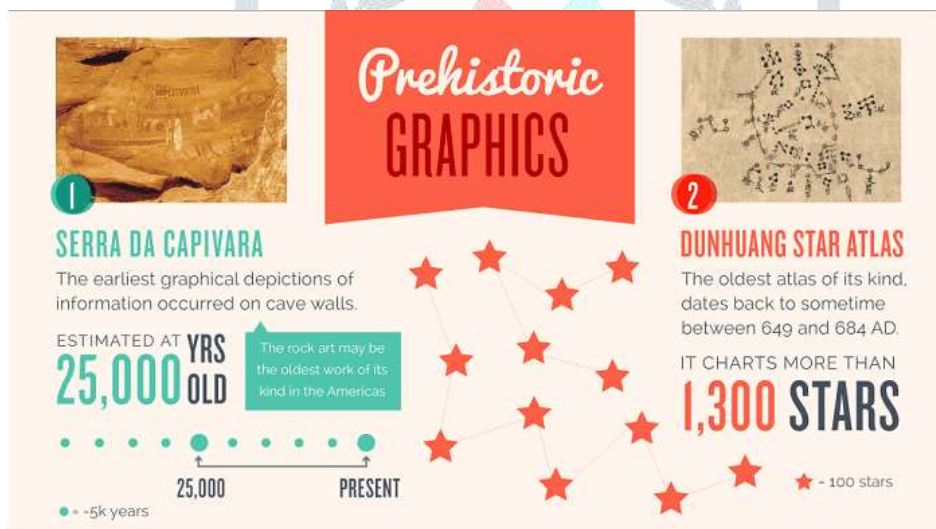


Fig. 2 Shows a visual representation about the history of graphics using an infographic.

Image Source: <https://rb.gy/vh5oxb>



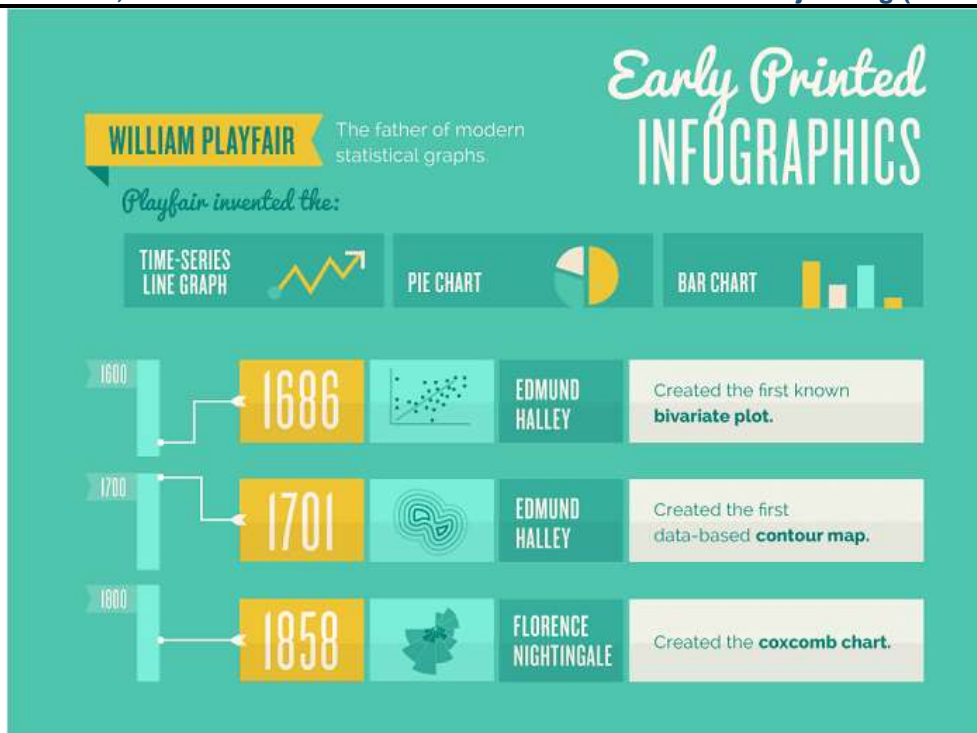


Fig. 3 Shows a visual representation about the early printed infographics using an infographic.

Image Source: <https://rb.gy/vh5oxb>

### 1.5 Tools or software used in infographic

To generate creative infographics, professional infographic designers use a core vector graphics software application. The key benefit is that all icons, charts, photos, graphics, and data visualizations are considered as individual objects that may be moved, scaled, overlapped, and rotated with ease. The final infographic design is usually put together in a vector graphics application, no matter where you generate the various design parts. Creating infographics with online tools has never been easier. In recent years, a slew of Internet tools has emerged that enable anyone to create exceptional visual content. You'll need a template to get started on any project, whether it's for work, personal usage, or social networking. Now that the dimensions have been given out for you, you can focus on quickly producing outstanding designs. It's as simple as looking for something, dragging it, and publishing it. These new tools are vector graphics software that run in your browser and may be used to create infographic designs instead of utilizing a costly professional desktop product like Adobe Illustrator. As a starting point, each one provides a variety of tools, picture libraries, charts, fonts, and layouts. None of these have all of the features of a professional desktop application, but for a basic infographic, you definitely don't need that much capability.



Fig. 4 Shows Visme User Dashboard

Image Source: <https://rb.gy/kxn89k>

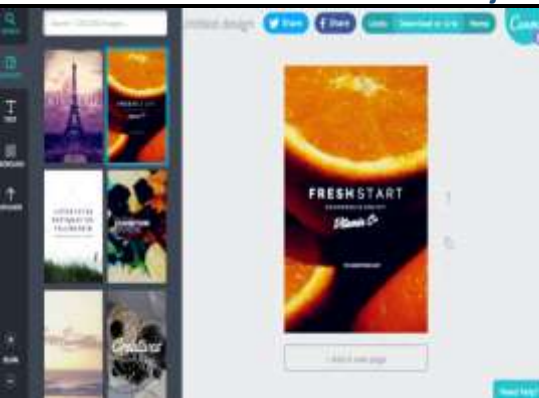


Fig. 5 Shows Canva User Dashboard

Image Source: <https://rb.gy/p1xonr>

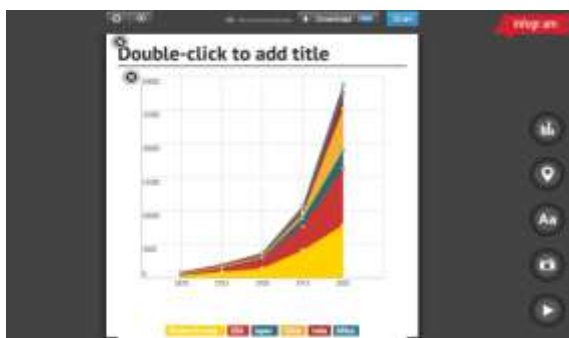


Fig. 4 Shows Infogr.am User Dashboard

Image Source: <https://rb.gy/8jwqiz>

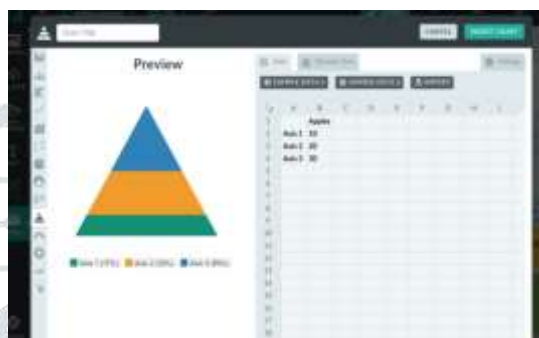


Fig. 5 Shows Piktochart User Dashboard

Image Source: <https://rb.gy/d8y2gg>

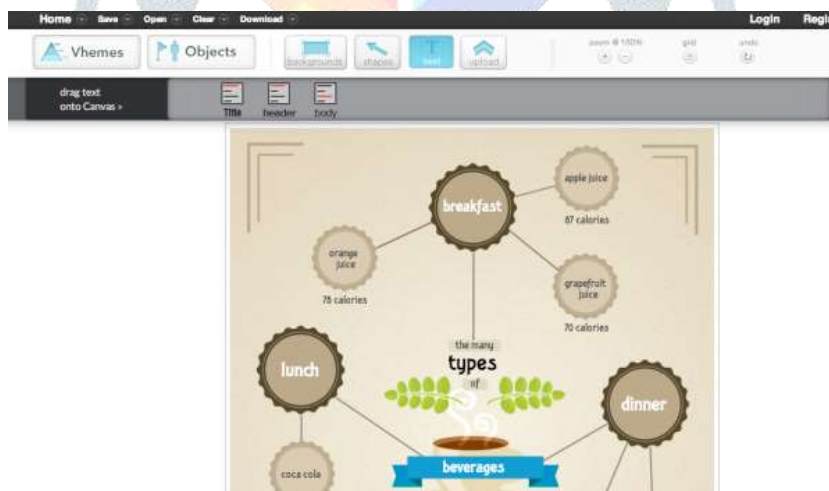


Fig. 8 Shows Easel.ly User Dashboard

Image Source: <https://rb.gy/baovvw>

## 2.0 The importance of info graphic design in the internet age

Before the Internet era, the carrier of information dissemination has always been text. As society develops, sound, graphics, images, and videos have also become one of the most important carriers of information dissemination. Information data is translated via visual language to convey huge data content more accurately and intuitively.

However, many people cannot identify the main points of information with their naked eyes within a short amount of time, which led to the rising of information graphic design. Information graphics can effectively integrate product data, cultural content, and picture materials while delivering them to its targeted audience. After the text information has been summarized and understood, through constant practice, it is displayed in line with human reading habits and aesthetic standards by using simple and abstract graphics symbols and typesetting. Compared with boring text, it is easier to be accepted by the audience. It not only shortens the time for an audience to grasp information but also improves communication efficiency. As a form of added value in information design, graphics exist with information dissemination, making it easier to widespread. According to surveys, in the Internet age, every individual encounter dozens or more infographics within a day on average. In the long run, it is not difficult to infer the huge societal influence of infographics. As a carrier of information, graphics accompany human development, effectively promoting social development and improving social living standards. (As shown in figure 9)



Fig. 9 Shows an example of infographics

Image Source: <https://draftss.com/blog/designing-infographics-the-how-to-guide/>

### 3.0 Elements of Design in Infographics

The design elements in infographics include creativity, graphic symbols, illustrations, colors, copywriting, and the architecture. It is a process of transforming huge data information into visualization. In the process of infographic design, it involves a variety of visual communication design capabilities such as font design, graphic design, color design, layout design, etc.

### 3.1 Creativity

Creativity is not only used in advertising design. If creative design techniques are integrated into the design of the infographic, it will greatly enhance the overall quality of the infographics, making the copywriting less boring, which also enhances the transmission of information. Therefore, during the design process and production of the information graph, you can constantly try out different creative techniques, so that the data information can be flexibly conveyed to people. Mind mapping and brainstorming are effective ways to generate ideas. Using simple and clear keywords to associate much-related content, such as watches-men-success-business. According to this deduced way of thinking, there will be a large number of expressions germinating in the mind.

### 3.2 Graphic Symbols

Symbols and graphics coexist in the information map. Symbols are carriers of information, which can carry or transmit them. The symbols of information graphic design are conceptual graphics, usually abstract graphics, which have the characteristic meaning of expressing key points. They can replace words, which not only saves space but are more vivid and specific, making the information clearer and more concise, which is easier for people to understand.

### 3.3 Illustrations

The illustrations in the infographics are not born out of thin air, nor are they just for aesthetics. They appear in the picture in the form of storytelling based on the content of the information. Storytelling does not require a complete narrative. The main tasks of illustrations are to conform to the data and information, to connect to the content to be expressed so that the storyline can be relaxed and easy to understand.

### 3.4 Colors

The use of colors makes information more symbolic and appealing. Everyone has different preferences for colors. Therefore, when choosing colors, you should pay attention to the information and audience groups that the product wants to express. Color plays a vital role in the design of infographics. Whether it is a single



or multi-color infographic, it reflects different forms of design concepts. Multi-color collocations represent different atmospheres. Black and white collocation means fashion, dreamy purple means women, and technological blue is often used in product promotion. Also, colors can show the direction of information. For example, an information graphic about women's shopping needs to use gentle and bright colors that are very feminine.

### 3.5 Copywriting

Copywriting includes text and numbers to make the information more complete. Fonts are one of the vital design elements of a picture. Different fonts have different styles. The choice of fonts must be in line with the content of the copy. The appropriate use of font can play a multiplicand effect with half the effort. In the design process of a layout, generally, three fonts are maintained, and the font size is adjusted according to the primary and secondary information content. Special or large fonts indicate the title and key content in the layout.

### 3.6 Charts

Data are presented by statistical charts and tables, and charts can classify and organize information contained in the information graph. As we all know, charts include flow charts, Venn charts, organization charts, etc... Most of the icons are geometric figures, but in the process of making icons, visual symbols can be added between the information content at will to connect the data, and the charts can not only be limited to two-dimensional figures, one can use three-dimensional graphics to express the data information in a more vivid and interesting way. According to the regional division, the use of three-dimensional illustration picture classification expresses clearly and at the same time more interesting.

### 3.6 Architecture

Architecture is equivalent to layout design in visual communication design. The process of layout design is the process of people's cognition of information and should obey the reading logic habits of human beings. The top-to-bottom information architecture method takes the content considered by the strategic layer into a direct structural design based on product goals and user needs. Begin by classifying the broadest range of content and functions that are likely to meet the decision goal, and then logically subdivide them into subcategories. In terms of layout, headings and navigation are generally located at obvious positions on the

page, such as the upper end and the center, which have the guiding role of highlighting the distinctive theme.

The content of the page data has a clear priority, and the secondary elements should be at the most important position of the page. They should be weakened to prevent unnecessary content from overwhelming the main and interfering with the delivery of the theme elements. The overall page should be concise and clear, and the design elements in the interface style should be unified and aligned. The main work of information architecture is to design the structure of the organization, classification, and navigation so that the audience can efficiently and effectively browse the data and information content. For data information, the architecture of information focuses on whether the information presented to the audience is reasonable and meaningful. The more diverse the elements on the page are, the more unable they are to clearly express the theme content and convey the object. On the contrary, it will be disturbed in the process of receiving the information by the audience, which is worse for the audience's memory of the information conveyed. Therefore, designers should use the design technique of "subtraction" in the process of architecture, "less is more", and analyze the page from the perspective of the audience in the design process, to eliminate useless work for the audience and improve efficiency.

#### **4.0 Case Studies with proposed solutions on the designing issues of infographics**

As stated by (Balliett, 2011), infographics, unlike certain design trends, are here to stay. Infographics are becoming a formidable tool for spreading massive amounts of information to the masses, thanks to brands like USA Today, The New York Times, and Google, as well as President Obama's support. Infographics are being used by businesses large and small to establish their brands, educate their audiences, and improve their search engine rankings through link-building. This is why knowing how to create a decent infographic is essential, and avoiding common infographic design blunders might make the difference between winning a huge customer and losing them completely. Below are some case studies along with proposed solutions on common designing issues of infographics nowadays.

##### **4.1 Show, don't tell**

Show, don't tell is a cinematic rule. The same is true when it comes to infographic design. Data visualization is the core of any effective infographic. You may not always determine the concept and gather all of the research for the final design as an infographic designer, but in either case, you are responsible for transforming

that information into a visually captivating, cohesive design that tells stories and doesn't miss a chance to visualize data. Consider this section of a ViralMS infographic about Twitter:

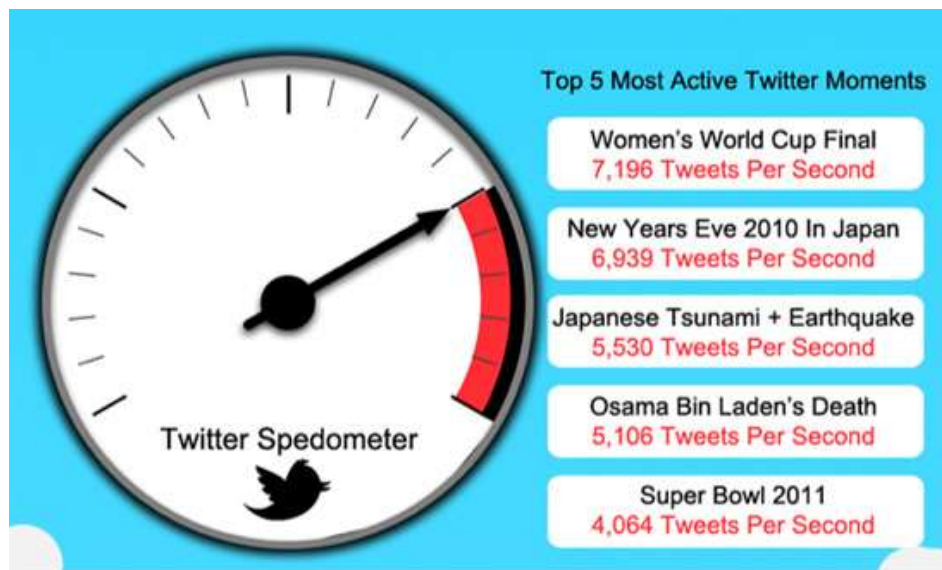


Fig. 10 Shows a twitter infographic which writes out data, instead of visualizing it.

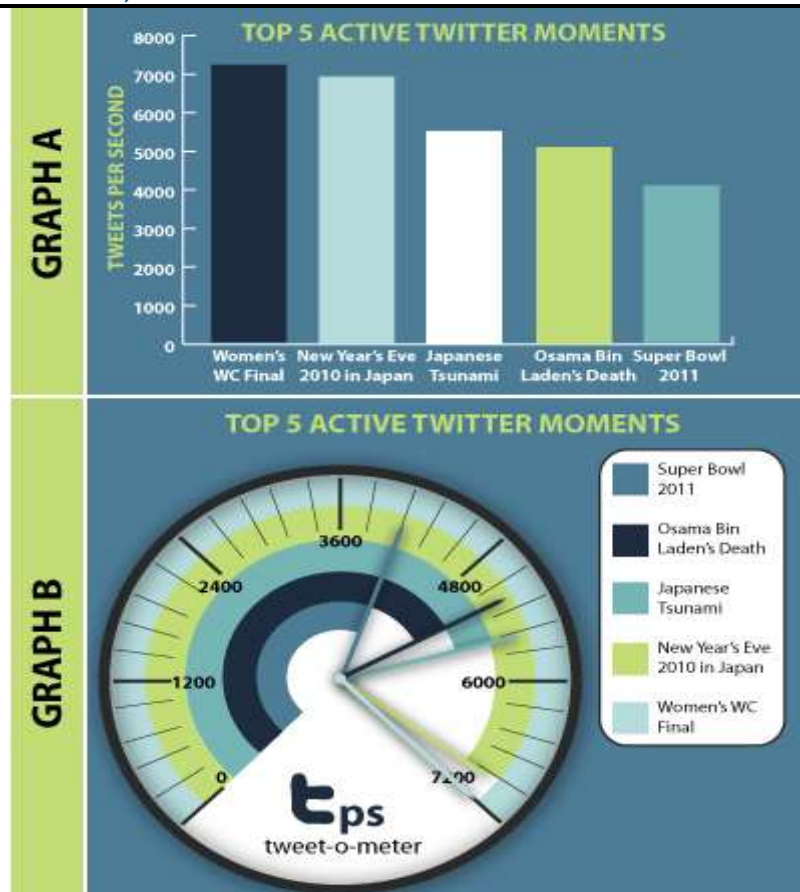
Image Source: <https://rb.gy/upp5ys>

What exactly is the issue with this infographic? It starts off by breaking the first rule. Take advantage of any opportunity to visually display information. At the very least, the tweets per second may have been displayed as a bar graph. This would allow someone to rapidly scan this part and see what's going on; the eye could have easily gauged the differences in tweets per second per event by looking at the varying heights of the bars without having to read anything.

#### 4.2 Dress up simple graphs

Clients would not need to look for skilled designers if infographics were as easy to create as arranging a collection of standard charts and graphs on a page. There are a plethora of internet tools for creating colorful pie charts, line graphs, and bar graphs, so you'll need to go above and beyond to make your design stand out.

Which of the two graphs below do you think would make a client happiest, based on the data above?



*Fig. 11 Shows two ways to visualize the data from the Twitter example above*

Image Source: <https://rb.gy/zztjg2>

You're catching on if you answered Graph B. Obviously, not all data lends itself to distinctive graphs and imaginative visualizations. If the rest of the infographic had the same look as Graph A, it might be a winner. Sometimes you just have to bite the bullet and create a typical bar graph or pie chart; however, think about how you can dress it up, as shown in the examples below:



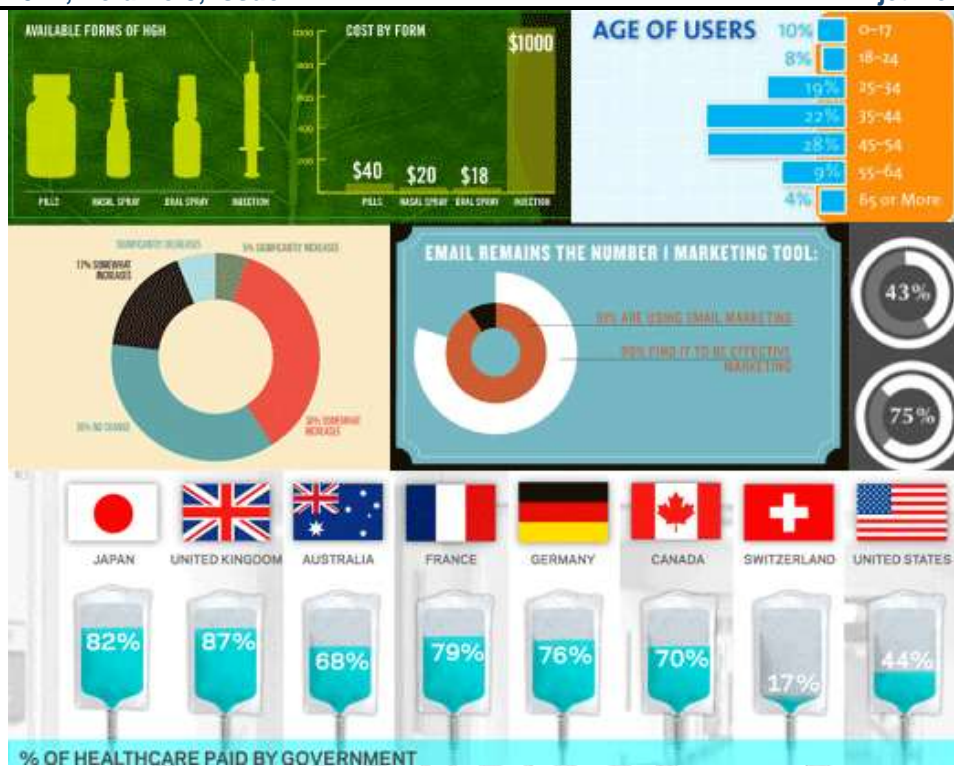


Fig. 11 shows different ways to dress up simple graphs for an infographic.

Image Source: <https://rb.gy/82wqfl>

### 4.3 Organization and storyline

It's not always easy to organize an info graphic in a way that makes sense and keeps the viewer interested, but it's a necessary element of most infographic designers' jobs. Typically, you will be given a large amount of data to work with and will be required to construct a visual story from it. This can be difficult at first, but there are some broad guidelines that can help.

#### 4.3.1 Wireframe the infographic

You may create a storyline and layout for an infographic by wireframing it. You may have a general notion of the story you want to tell, but as you begin to lay down the details, you may reach a snag and have to restart. It's really inconvenient to have to restructure after having completed much of the design. To avoid this, decide what facts to show and how to convey it at the beginning of your story. Set aside an hour to sketch out your ideas and double-check that everything is in order. This will also help make sure that the color scheme you chose draws attention to the crucial details while also allowing the eye to move down the page. Here are a few unconventional layouts that spark your imagination:



Fig. 12 Shows ways to layout an infographic to keep your viewers engaged.

Image Source: <https://rb.gy/a8sckv>

#### 4.3.2 Tell a story

A beginning, middle, and end are present in all good stories. The same respect should be given to infographics. Introduce the issue or thesis at the start of your infographic. Then use facts to back it up. Finally, a conclusion should be added to the infographic.

#### 4.3.3 Visualize the Hook

Every good infographic has a hook or main point that makes the viewer say, "A-ha!" If at all possible, as a designer, you should make this hook the centerpiece of your design. It's usually better to put the hook in the middle or at the very end of the infographic to draw more attention to it. Give the most significant information the most visual weight, so visitors can figure out what to remember. Here are a few well-illustrated hooks:



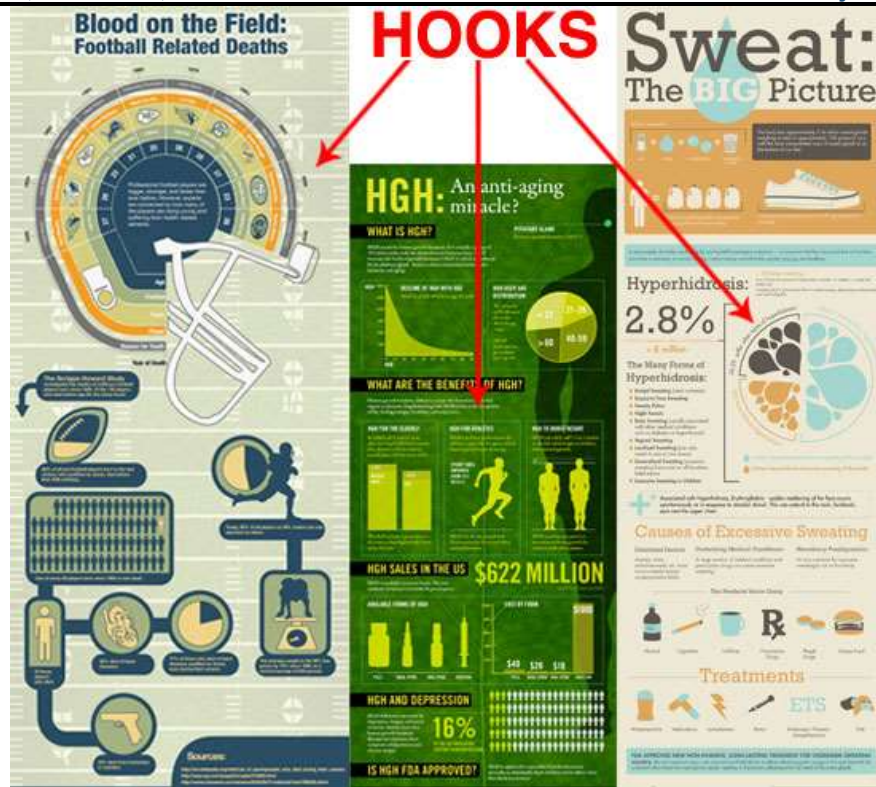


Fig. 12 Shows examples of well visualized hooks.

Image Source: <https://rb.gy/uaaeyt>

#### 4.4 Three-color Palette

With all of the information in an infographic, make sure the reader's eye can easily flow down the page; a poor color palette can be a major roadblock in this regard. Choose a palette that isn't overpowering to the senses. Consider doing so before you begin designing, as it will assist you in determining how to picture the various aspects.

If choosing a color scheme is difficult for you, follow the rule of three. Pick three primary colors to use. One should be the background color (typically the lightest), and the other two should be used to break off the parts. Use shades of the three main hues if you need to add other colors. This will keep the palette from becoming disjointed and jarring.



Fig. 12 Shows some good and bad palettes for infographics

Image Source: <https://rb.gy/kpwwx5>

## CONCLUSION

With the rise of the internet, information graphic design has gradually attracted attention and has become an indispensable mode for Internet media to present big data. In the process of designing information graphics, designers should consider that information graphics are not only the carrier of information visualization. The concept guides the audience to interpret the data and information to achieve the purpose of visual communication. Therefore, it is essential to treat information graphic design elements objectively, so as to achieve the purpose of complementing the design form and information connotation. However, in the era of Internet development, information visualization still needs a long process of development. In future research, it is necessary to strengthen and explore more accurate graphical visualization of information.

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