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MOBILE FIRST DESIGN

– Using Bootstrap



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The aim of this project was to design and build a website for a company based in Australia. The business offers remedial massage therapy to its clients. It is a small business which works on the basis of calls and message reservation. The business currently has a temporary website designed with Wix, a cloud-based web development platform. The new website was built with responsive design using Bootstrap. This website was intended for the customers using mobile internet browsers. This design is called mobile first design.

KEYWORDS:

Bootstrap, website, design, mobile-first approach, HTML, CSS, Wix, responsive design

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LIST OF ABBREVIATIONS (OR) SYMBOLS

HTML	HTML, which stands for HyperText Markup Language, is the predominant markup language for web pages.
CSS	Cascading Style Sheets
CDN	Content Delivery Network

1 INTRODUCTION

In the last few decades, the internet has become the main source of information. Almost all companies and businesses have a website as it has become a must. A modern-day customer goes to the internet to get information about a product or a company, and an alternative product is just one click away.

The client for this project is a remedial massage clinic called "SAM REMEDIAL". The client has a cloud-based website designed with Wix.com. The business has currently been depending on its current customers to attract new customers by recommendations. This project aims to help the business to connect with internet-based customers by designing them a website.

This project includes responsive design, so that, smart phone users can browse the website with ease and the website will adjust the contents with the screen size and device it is viewed on.

Before actually working on the project, a study of the current website and analysis why it had not been effective in acquiring new customers was conducted. Some research was done on current website trends and habits of regular internet users. A discussion on the needs of the client was the next step before working on the initial design of the website.

2 CURRENT WEBSITE AND RESEARCH

2.1 Website

The current website was designed with Wix.com in 2014. The current website has all the necessary information as shown in the screen shots of the current website. The design is very simple and plain. The website has three pages in total. The first page (Picture 1-2) consists of all the information about the business including lists of services they provide, along with reservation details and location. It is easy for customers to find everything they might need on one page, but , on the other hand, the amount of text makes it look slightly cramped and unimpressive at first glance.

The last page “Contact” consists of contact information and address of the office and also a contact for sending messages and giving feedback.

The website is also incomplete. The “About us” page does not have any content.

REMEDIAL MASSAGE

Your body is precious. It is your vehicle for awakening. Treat it with care.
-Buddha



HOME

ABOUT US

CONTACT

Dear Customer,

I am an experienced, fully qualified and insured Remedial Massage Therapist based in Bicton, East Fremantle and Melville area in Perth.

Do You Suffer From:

- back pain
- stiff neck
- sore muscles
- neck pain
- constant headaches

Just to name a few.

If so, *remedial therapy massage* could be the answer!

We provide

- Whiplash treatment
- Treatment for the forearm and elbow; Tennis elbow, Golfers elbow
- Common treatments for foot/lower limb pain.
- Treatments for the foot, ankle and lower leg pain.
- Treatment for hip and thigh; groin and hamstring injuries



Follow Us



Picture 1. Screenshot (pt1) of the current website

Book us NOW!

Prices

- \$35 for ½ hour
- \$70 for 1 hour

Private health insurance rebate available!

All treatments need booking.
Office and home visits are also available if required.

Contact us at:

E-mail: remedialclinic@gmail.com
MOBILE: 04 0407 1177



OPENING HOURS TUESDAY-FRIDAY 6:00 AM - 21:00PM SATURDAY-SUNDAY 6:00AM - 21:00PM BY APPOINTMENTS ONLY PLEASE CALL SAM 0404 07 1177	CONTACT Sam Remedial Therapy 595 Canning Highway Shop 2 Alfred Cove, WA 6154 remedialclinic@gmail.com MOBILE: 04 0407 1177	FIND US
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Picture 2. Screenshot (pt2) of the current website

2.2 Research and Web Trends

Browsing websites for services has become like a new form of window shopping. According to Entrepreneur’s article “10 Things Customers Want on a Website” (Entrepreneur 2010), customers have following expectations when visiting a company’s website and the comparison of the following with this project can be seen in (Table 1) in Chapter 5.

1. "How your business is unique"

The business should tell the customers what it is that makes their business differ from others. Why should they choose this company over

another? The answer to this question has to be as honest and compelling as possible.

2. **"A clear sense of what your company offers"**

There are many websites which are not clear enough about what the company offers or what it represents. Not finding clear information could irritate visitors. It is recommended to clarify general information of the business or guide to product/services on the homepage.

3. **"Contact information, including a phone number and physical location"**

Many companies do not include the contact information clearly enough on their websites. Some who do their business online do not find it necessary to include their physical address. However, *"this is a must, and it's one small way of building credibility and trust"* with the consumer, says Wayne Porter, co-founder of ReveNews. (Entrepreneur 2010), *"A phone number, a street address and even pictures go a long way toward building credibility."*

4. **"Third-party validation"**

Customer testimonials are the new reviews of companies. Many people check the reviews and comments on products before purchase. Checking the reviews and experiences of current customers is what many potential customers do before making a decision

5. **"Secure Socket Layer (SSL)"**

The SSL is an encryption system which protects the customer's private data (i.e., credit card information) exchanged on the website. This is a must for an honest business and is necessary to win the trust of customers.

6. **"Ease of use and navigation"**

A website should be as simple as possible. Trending websites such as amazon.com, alibaba.com or ebay.com are made in a way that it is easy for a customer to navigate through the pages.

7. **"Clear guidance on your processes"**

An Internet-based business should have a step-by-step procedure for ordering services.

8. **"An ability to give feedback"**

It is necessary for a business to receive feedback to know if the customers are satisfied or if they have any suggestions. Customer satisfaction and feedback is vital for businesses such as Sam-Remedial.

9. **"Clear calls to action"**

According to the magazine, "*customers want signs or buttons in order to act, be it 'Buy now' or 'Sign up for our newsletter' or 'Click here for more information.'*" These are used to take the customers relationship forward. For this website though, there is no need of calls to action as no necessity for it was seen.

10. **"Special offers and personalization"**

This business has not yet implemented any special offers for the customers. There are no such offers mentioned in the website for now. If it is introduced in business later in the future, it can be added on the website.

3. RESPONSIVE WEB DESIGN

Responsive web design is a process of designing a website where it adjusts itself to the changing device and screen size. This makes it easier for a user to view a same website in multiple platforms with ease, as the website recognizes the device and modifies itself for the optimum view as it can be seen on Picture 3.



Picture 3. A responsive website (Source: pixbay.com, 2016)

The usage of smart phones is on the rise and does not seem to slow down. The amount of time people spend on their phones using internet is skyrocketing. Jemma Brackebush (2016) found that, *“On average, people around the world will spend 86 minutes a day using the internet on their phones, compared to 36 minutes on a desktop, this year.”*

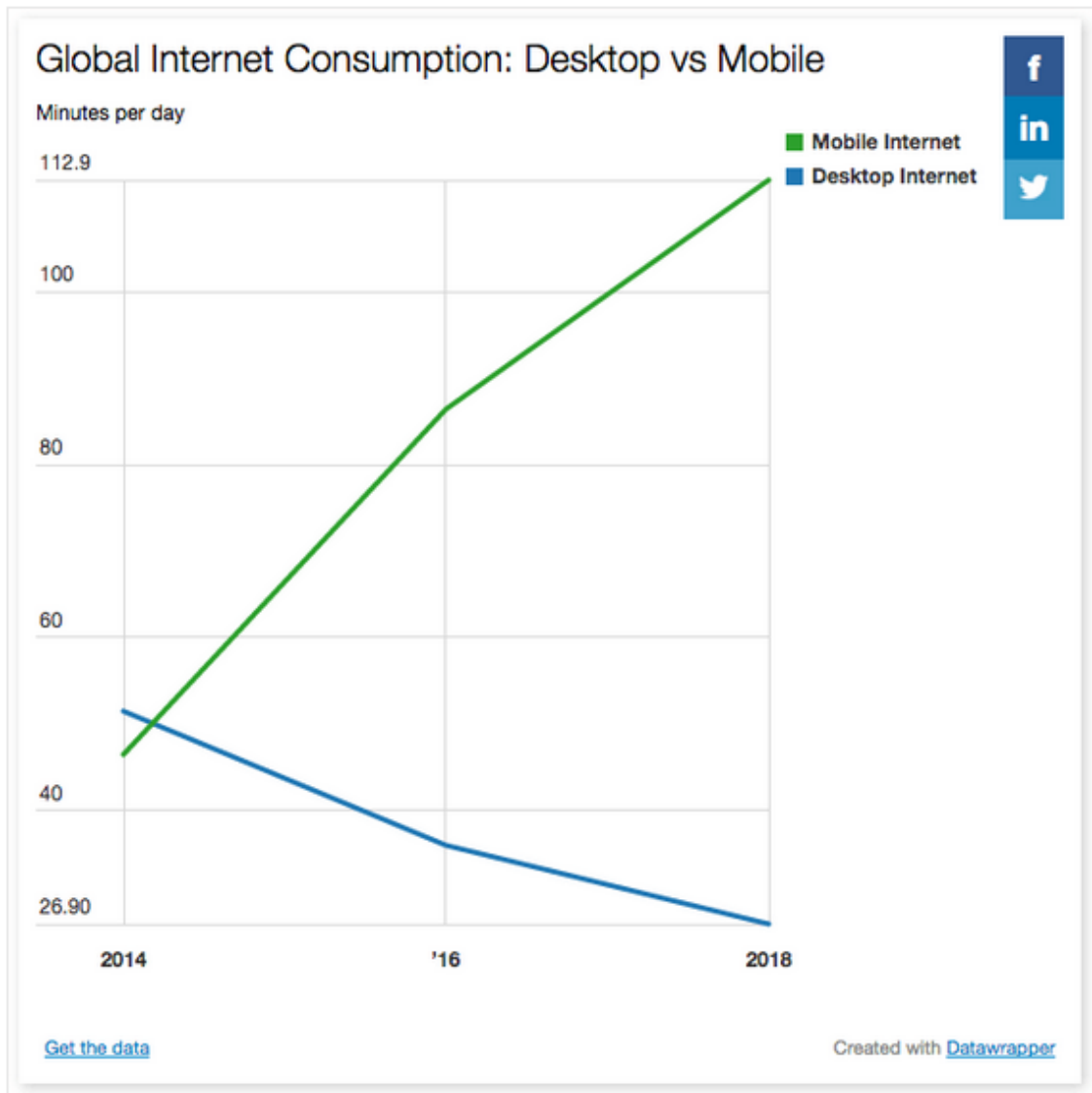


Figure 1. Statistics of Global Internet Consumption (Source: digiday magazine,2016)

This is mainly due to the availability of cheaper smart phones and widely available 3G and 4G services.

Keeping this change in mind, many websites are adopting the responsive web design by modifying the content to fit smart phone screen. Simply put, responsive web design is a process where the website adjusts itself with the platform.

4. BOOTSTRAP

[Bootstrap](#) is a popular open-source HTML, CSS, JavaScript framework for creating responsive web applications. Bootstrap includes HTML and CSS based design templates for common user interface. The templates include elements like buttons, drop-downs, typography, tabs, forms and tables etc. and it also includes optional JavaScript extensions.

The popularity of Bootstrap has to do with the features it has. Speed of development is one of the features it has. It is very practical when it comes to designing an application or website in short period of time. Bootstrap enables the use of block of codes to get the design started. There is no need for designing from scratch, the user can use the block of codes to design any part of the website. Many of the website designing companies are using this approach to deliver the products to their customers in short duration. Websites like <http://Bootstrapbay.com/> also sell ready-made themes which can be modified according to the needs and used.

Bootstrap uses a grid design system, which comes with advantages. It makes planning and designing of the website easier and more manageable. It is used in aligning the contents when making it responsive. According to [Mark Anthony](#) (2016) *“In the grid system, you can specify how many spots you want each column to occupy. After that, specify which point you want your columns to stack and display on mobile devices.”*

According to [Steve Burge](#) (2016) the popularity of Bootstrap grew by 1000% in just 3 years and has a 57% share (Figure 2) amongst web frameworks.

MARKET SHARE

This chart shows the global market share of technologies in the category Web Frameworks. The current market leader is [Twitter Bootstrap](#).

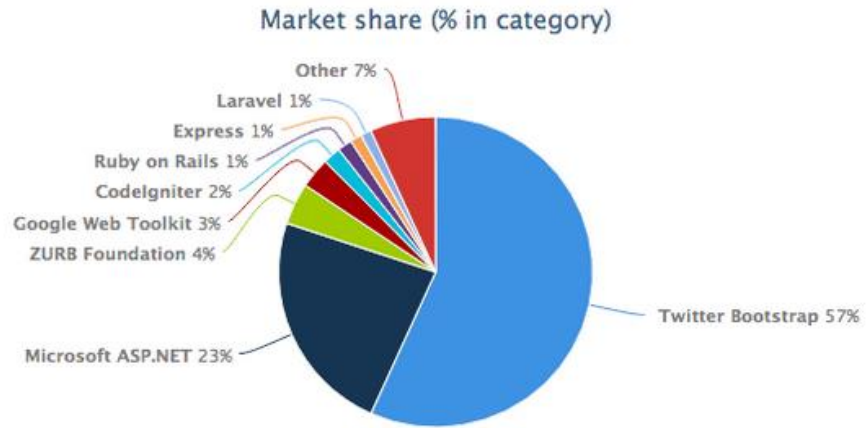


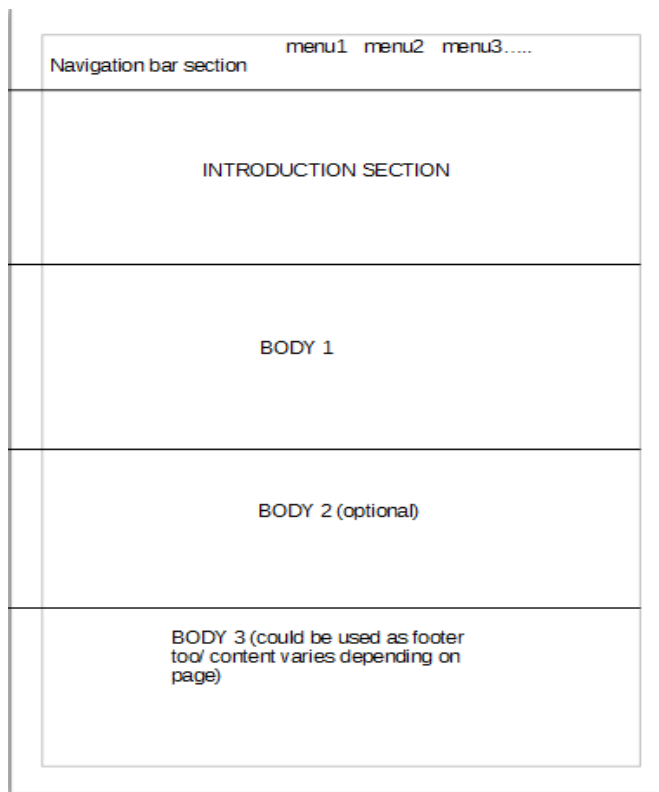
Figure 2: Bootstrap market share (Source: OStraining.com, 2016)

5. Work process

The objective of the thesis was to create a website which is modern, functional and complete. The website should also be responsive and easy to browse on multiple platforms. The client wanted the contact information on the first page so that it is clearly visible to the customers who want to contact the business.

5.1. Outline of the website

The work began by drawing the outline (Picture 4) for the website. During this phase the sections of the website were divided. The content for each section was decided. The combination of colors was also chosen with the help of a color combination website. Color combos (<http://www.colorcombos.com/>) is a color combination website intended for designers. It was used in this project to choose color schemes for the different parts of the website.



Picture 4 Website Outline

The work was focused on the main page of the website. The main page is divided into five sections with navigation bar at the top and followed by an introduction and the rest accordingly.

5.2 Practical design of the website

The following (Picture 5) CDN (Content Delivery Networks) was added in the head section.

Picture 5. CDN of Bootstrap

`<div class= "container fluid">` was used to occupy the whole width. The following navigation menus were added; Home, Services, About Us, Contact and REMEDAL-MASSAGE.

`<div class= "container fluid">` was used to occupy the whole width. The following navigation menus were added; Home, Services, About Us, Contact and REMEDAL-MASSAGE.

Class `"active"` was used for identifying an active menu. In addition `"navbar-inverse"` was used to inverse the color from dark-text/white-background to white-text/black background. The navbar was pushed to the right side and `"navbar-toggle"` was used for the mobile view of the website. The menu is hidden inside the "hamburger" icon when reduced or viewed from phone or tablet.

Introduction

Introduction is situated below the navigation section. It consists of the logo and a brief description of the business. Color #1F1209 was used for the background and #ffffff is used for the text. `<div class= "container-fluid">` was used to occupy the available space.

Sliding reviews

Considering the type of business and the importance of reviews in such businesses, sliding reviews were added. This section is just below the introduction. background-color: #003366; and text color: #ffffff were used. The reviews slide automatically every second and also with the user's click.

Price and Reservations

Price and reservation information were added on the *body2* section of the outline drawing. Along with the reservation information, i.e. prices and contact information, two glyphicons were also added.

“Glyphicons is a library of precisely prepared monochromatic icons and symbols, created with an emphasis to simplicity and easy orientation.” (Glyphicons.com). the logos glyphicon-time and glyphicon-earphone were added for this section. Picture 6 below shows the command used for adding an earphone logo.

```
<div class="col-sm-6">  
  <span class="glyphicon glyphicon-earphone logo"></span>  
</div>
```

Picture 6 Glyphicon

Google maps

```
<script src="http://maps.googleapis.com/maps/api/js"></script>
<script>
var myCenter = new google.maps.LatLng(-32.0311574,115.8141291);

function initialize() {
var mapProp = {
center:myCenter,
zoom:15,
scrollwheel:false,
draggable:false,
mapTypeId:google.maps.MapTypeId.ROADMAP
};

var map = new google.maps.Map(document.getElementById("googleMap"),mapProp);

var marker = new google.maps.Marker({
position:myCenter,
});

marker.setMap(map);
}

google.maps.event.addDomListener(window, 'load', initialize);
</script>
```

Picture 7 Google maps

For the body3 section of the home page, Google Maps pinpointing the location of the business is shown. The map is displayed in black and white using *filter: grayscale*; to make it look more elegant and stylish.

Responsive design

Setting the Viewport

The following <meta> viewport element was added to the webpage.

```
<meta name="viewport" content="width=device-width, initial-scale=1">
```

The <meta> viewport element in the browser acts as the guideline in controlling the webpage's dimension and scaling.

The "width=device-width" sets the width of the webpage according to the used device's screen size.

"initial-scale=1" controls the zoom of the page when it is first loaded.

Expectations of the customers and outcome

Comparing the website with entrepreneur's article "10 Things Customers Want on a Website" (Entrepreneur 2010), the following (Table 1) findings were made.

Table 1. Expectations and findings

Expectations	Results
Uniqueness	This project highlights the uniqueness of the business. The front page of the website describes the experience and expertise. The introduction section of the website consists of a short description of the business.
A clear sense of what company offers	An introduction on the top of the page tells about the business and furthermore, 'About us' page describes the about the company in more detail.
Contact information and location	This business needs customers to visit their physical address for the services. The location and the contact information of the business are provided on all three pages of the website.
Third-party validation	This is a business which is highly affected by customer feedback, and thus showing the feedback is essential which can be seen sliding on the first page.
Secure Socket Layer (SSL)	For this business there is no need for the use of any credit card information on the website, as the customer pays via credit card or cash on the spot. Therefore SSL was not seen necessary.
Ease of use and navigation	The website is easy to navigate. Customers can easily find the necessary information about the company, services and contact on the home page and the menus on the navigation bar.

6 Website

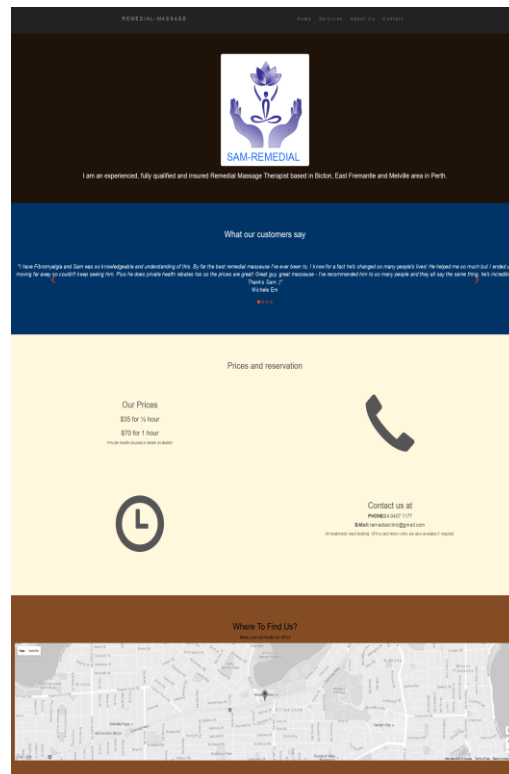
The ready website, desktop version and mobile version is shown in the following pictures (Picture 8 and Picture 9). The website adapts itself with the changing platform and screen sizes. One of the major distinctions between the two websites is the hamburger icon on the mobile version of the website. The icon withholds the navigation menus and releases when pressed upon. The mobile version also compresses the contents to fit on the screen.

The topmost section of the desktop website consists of navigation menus while on the mobile version the navigation menu is hidden and replaced with the hamburger menu.

The section below the navigation menu is followed by Introduction section, Sliding Reviews, Price and Reservation information and Google Map location respectively, on both of the designs. The notable difference between the body of the both websites is that the content is compressed on the mobile version of the website.



Picture 8 Mobile design



Picture 9. Desktop design

7. CONCLUSION

Website designing trends are always changing; some trends last for years and some designs may even last for a decade. Many new mobile devices have been invented in the past decades and new ones are being invented constantly. The number of mobile users has increased drastically. Most companies are adapting to this change and making their websites with responsive design. In other words, websites are being designed to adjust themselves with the changing platforms.

Nearly 60 percent of Internet searches are done through mobile devices (<http://searchengineland.com/report-nearly-60-percent-searches-now-mobile-devices-255025>). Websites with minimalistic designs are taking over the crammed ones. Hence, businesses are adapting to responsive design.

Bootstrap could be the future of web design, especially in mobile first design. It is an open source tool, and one of the reasons for its popularity is the time saving development. Blocks of codes are used to design instead of coding from scrape, which makes it easier for businesses to manage and update their websites. Bootstrap also allows purchasing readymade themes where the content can be modified to the client's needs making it possible for designers to complete the design in no time.

Small scale businesses like Sam-remedial can benefit hugely by adapting to the responsive design. Verisign (www.verisign.com), a global leader in domain names and internet security conducted a study in 2015 reported that "84% consumers believe that small businesses with websites are more credible than ones without an online presence." Since 60% of customers are using mobile devices for Internet searches, it is vital for businesses to have a responsive website. It gives small businesses a chance to get discovered and compete in a competitive market.

REFERENCES

Otto, M., Thornton, J. and contributors, B. (2014) *Getting started · Bootstrap*. Available at: <http://getbootstrap.com/getting-started/> (Accessed: 13 January 2017).

Brackebush, J. E. M. M. A. (2016, June 14). How Mobile Is Overtaking Desktop For Global Media Consumption, In 5 Charts [Blog post]. Retrieved from <http://digiday.com/publishers/mobile-overtaking-desktops-around-world-5-charts/> (Accessed: 2 December 2016).

Burge, S. (2016) Bootstrap's Popularity Grew 1,000% in 3 Years. Available at: <https://www.ostraining.com/blog/coding/Bootstrap-popularity/> (Accessed: 27 November 2016).

Entrepreneur (2010) 10 Things Customers Want On A Website. Available at: <https://www.entrepreneur.com/article/207300> (Accessed: 27 November 2016)

McEvoy, M. (2016) 7 Reasons You Need A Small Business Website. Available at: <http://www.webpresencesolutions.net/small-business-website-benefits/> (Accessed: 4 December 2016).

Pixabay (2017) *Free image on Pixabay - responsive, web pages, Websites*. Available at: <https://pixabay.com/en/responsive-web-pages-websites-1622825/> (Accessed: 12 November 2016).

Torrocha, M.A. (2016) Here's 5 Benefits To Your Site When You Use Bootstrap Templates. Available at: <https://tractusonline.com/use-Bootstrap-templates/> (Accessed: 2 December 2016).

Score. (2016) Infographic: 5 Reasons Your Small Business Needs a Website. Available at: <https://www.score.org/resource/infographic-5-reasons-your-small-business-needs-website> (Accessed: 4 December 2016).