

Responsive Design: The Time is Now

Understanding the change in the mobile landscape

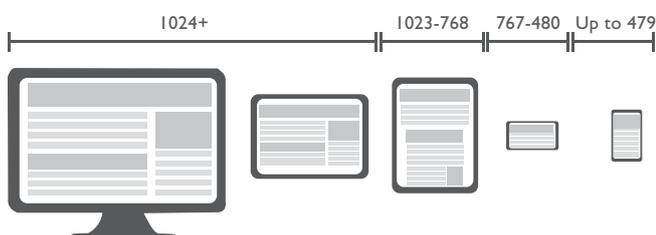
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Introduction

Devices of several sizes and shapes are all over the market. As application developers, keeping up with these devices is always challenging. Be it native or web-based applications, the ability of mobile applications to provide a seamless user experience to the customer shouldn't have to be a nightmarish task. Developers shouldn't have to create different apps or websites for different devices. Inspired by the media industry's consumption of content across the device portfolio, Responsive Design aims to eliminate such headaches.

A transformation in the marketplace is at the centre of Responsive Design. Mobile broadband subscriptions have been growing at 45% over the last four years and the total number of people accessing the web over mobile devices stands at 1.1 billion. Media consumption patterns are changing. Content delivery strategy needs to change as well.



The impact of device proliferation on content and design

It is not feasible anymore to design content for every device in the market. Researching customer preference for devices, creating and testing designs and continuously keeping pace with new devices is an expensive and impractical solution. The answer? Create designs that are fluid, flexible, and smart that fit any form factor and any resolution. In other words, the content should fit just about any viewport, from desktop to laptop and from tablet to smartphone.

Taking this a step further, designs should be able to sense the device capabilities and change behaviour accordingly. As an example, a web page displayed on a tablet should acquire “touch-and-swipe” capabilities in place of “click-and-scroll” that is more suited to desktops and laptops. If a page senses it is being accessed on a smart phone with a camera, it should automatically allow a 2D bar code to be scanned if necessary.

Re-engineering content for Responsive Design

This ability to re-shape content for optimal viewing and interaction based on detecting device capability is referred to as “Adaptive Design” or “Responsive Design.” Responsive Design addresses content spaces, images, video, navigation bars, and interactive elements - parsing and prioritising them for reuse within different devices. In effect, Responsive Design goes beyond understanding availability of real estate on a device. It understands and leverages device capability as well.

Responsive Design has been around as a concept for the last couple of years. Today, it is a highly sophisticated technique in terms of creativity, strategy and technology. We believe that 2013 is going to be the year when it picks up momentum. This is because the number of devices to manage is growing at an enormous pace. And we haven't even begun to factor in the impact of large format, smart, connected, flat screen, television sets that have begun to flood the market. Worldwide production of smart TVs in 2013 is expected to reach 108 million and will grow to 198 million in 2016 says Gartner Inc .This means that now more than ever, there is a need to create a Responsive Design approach to your content - an approach that lets content and apps easily flow into any device, creating ease-of-use and lowering cost of re-casting content for every device.

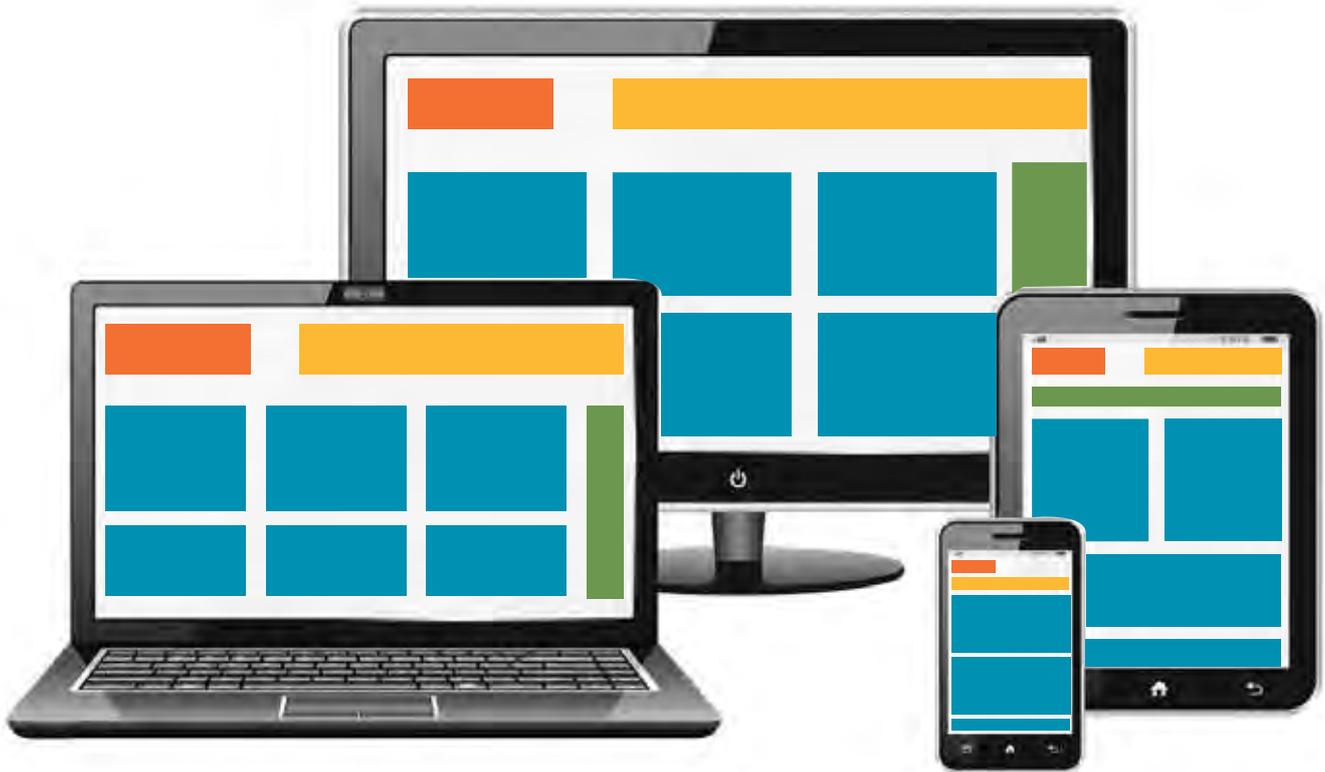
At the top level, Responsive Design's best practices are simple to understand - because they impact everyone as users:

- ▶ The number of columns of content for display should change based on screen size/ browser size to make it easy for consumption.
- ▶ Menus and content to be displayed must be prioritized based on timeliness, importance, popularity, scale, proximity and context of the user (for example, an enterprise user who has been travelling may be more interested in expense claims and reimbursements and should be shown content in keeping with the context).

- ▶ Images and video should be dynamically resized to fit the display screen.
- ▶ The tap-to-zoom process should be used over pinch-and-resize for images and text width.
- ▶ Prioritise content to keep download times down through resizing of images, smart placement of media queries, compression of HTML, JS & CSS files along with implementation of progressive downloads.
- ▶ Use content (HTML, CSS, JavaScript, images and audio/video) caching to save on bandwidth usage and reduce download times.
- ▶ Perform data syncs in the background for a smoother user experience.
- ▶ Menus, links and buttons should become bigger in size as they are displayed on a touch screen to ensure they are “finger-friendly”.
- ▶ Menus, links and buttons must be prioritised as they are displayed on devices that have differing real estate.
- ▶ The space between interactive links must grow larger to prevent accidental touch on smaller devices such as smartphones and tablets.



- ▶ The text size and line spaces must grow larger. This is to improve reading based on screen and column size.
- ▶ Leverage CSS3 capabilities to create visual effects instead of images.
- ▶ The content must leverage device capabilities when required (camera, accelerometer, GPS, audio and microphone).



In essence, what we are suggesting is that content must not blindly shrink to fit the device. Instead, it must intelligently re-shape itself for maximum usability and impact.

Starting your Responsive Design journey

Traditional desktop browser settings have, over the years, given designers plenty of space to lay out menus, information and interactive features. With new devices, we now need to ask, “What is the minimum configuration of information and features required to make the design useful?” Once this question is answered, the amount of content to be displayed can be built upwards, based on the access device, browsers, screens and resolutions.

Deciding on how to build content upwards as screen size grows may require some research across your user base or analytics based on actual usage. The prime concern should be to give the content a consistent look and feel, regardless of where it is accessed. Designers, for reasons beyond pure logic, find it tempting to use different layouts for different formats. This clearly points to the need for a rigorous understanding of information architecture that can keep the site looking consistent across access devices.

So far everything looks good, possible and manageable. But our experience shows that businesses often avoid starting their Responsive Design journey because it may imply redoing all the content at great cost.

Putting Responsive Design in place doesn't mean you need to junk your content and start over again. What you do need to decide is how your interface will appear across devices and then prioritise the content you already have.

Responsive Design is a client-side technology. It is implemented largely through the use of Cascading Style Sheets (CSS). The idea is to implement it with minimal server side support. At Wipro we do have instances where Responsive Design was enhanced by saving user preferences on the local DB for a seamless user experience across login sessions. However Responsive Design works best when it is largely client side, so that content can be rendered based on the device and environment it is being invoked in.

The other side of Responsive Design

There are limitations to Responsive Design. None of which are show stoppers, and none imply barriers to your Responsive Design journey. Instead, understanding these limitations will help move faster in your quest for delivering content that users enjoy.

It is important to understand that there is no one-size-fits-all solution. You can't, for example, scale up your content canvas from a tiny smart phone to a large screen smart TV. Images will pixilate, content will become unreadable and so on. It is therefore important to initially decide on the scaling that is optimal for your business.

While resizing images is critical to a good user experience, it does impact image quality and even distort images. This has a major implication for advertisers as content distributors would now need to pay extra attention to this dimension of Responsive Design.

CSS media queries play a significant role in the success of Responsive Design. Several mobile

devices may not be compatible with CSS media queries (CSS2 does not have full support for media queries). Again, this is a small limitation, but not a show stopper.

The road into the future: look out for the signs

Responsive Design is, doubtless, a powerful strategy to adopt. It reduces the cost of creating content for every device and improves user experience. However, it may not be the solution for everything. There are instances when porting or adapting content from desktops to mobile devices may not produce the best results. In such cases, a mobile-specific or a device-specific site would become essential.

It is worth getting expert opinion on your needs and using that opinion to create a roadmap for adopting Responsive Design.

For organizations today, adopting Responsive Design is inevitable given the growing Internet access over mobile devices. Getting a multiple device strategy in place is essential.

About the authors

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Subu has over 16 years of industry experience in Client Relationships, Business Development, Strategy Consulting, Architecture, Design & Delivery, with over 12 years focused specifically in the Mobility space. He has successfully led several large and complex mobility initiatives for key customers across different industries. He specializes in Mobile Strategy, Cross Platform Solutions, Mobile Payments and Enterprise Mobility.

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Vittal has over 14 years of industry experience providing customers user experience and creative design solutions. Vittal founded the user experience practice at Wipro close to a decade ago. He is currently focusing on Mobile User Experience.

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