响应式设计 Responsive Web Design: Rebuild as Design

bennyzhai(翟东方) OMG

One Piece 2013.6.7

WDC

WDC, 腾讯微博用户体验设计中心 @weibodesign

Responsive Web Design
2010.5-2013.5
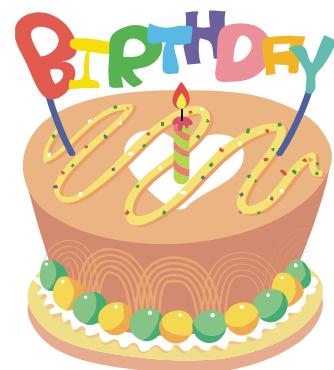
Happy Birthday! Then…WTF?

Example

@Mediaqueries
http://mediaqueri.es

Example

Ethan Marcotte
http://ethanmarcotte.com

Example

International Polar Foundation
http://www.antarcticstation.org
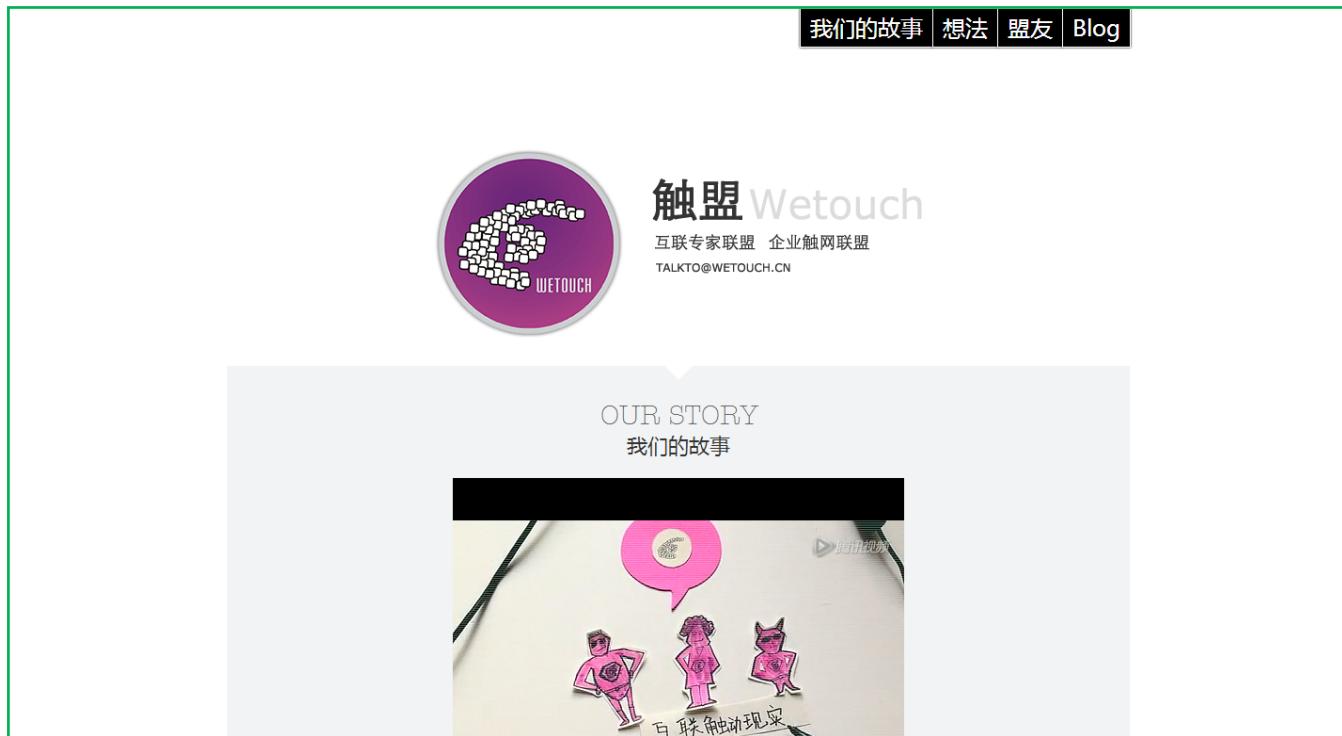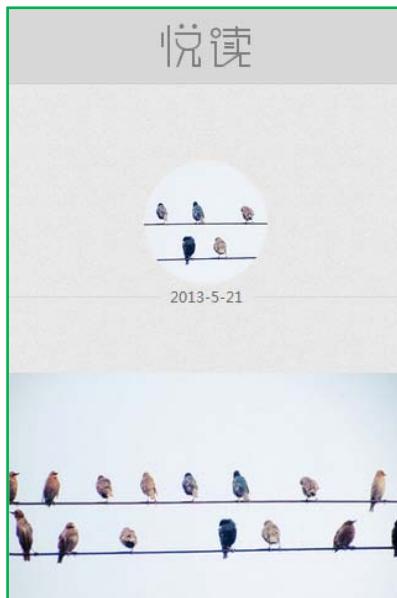
Example

Example

Essential

设计风格
Design Style

RWD

解决方案
Tech Solution
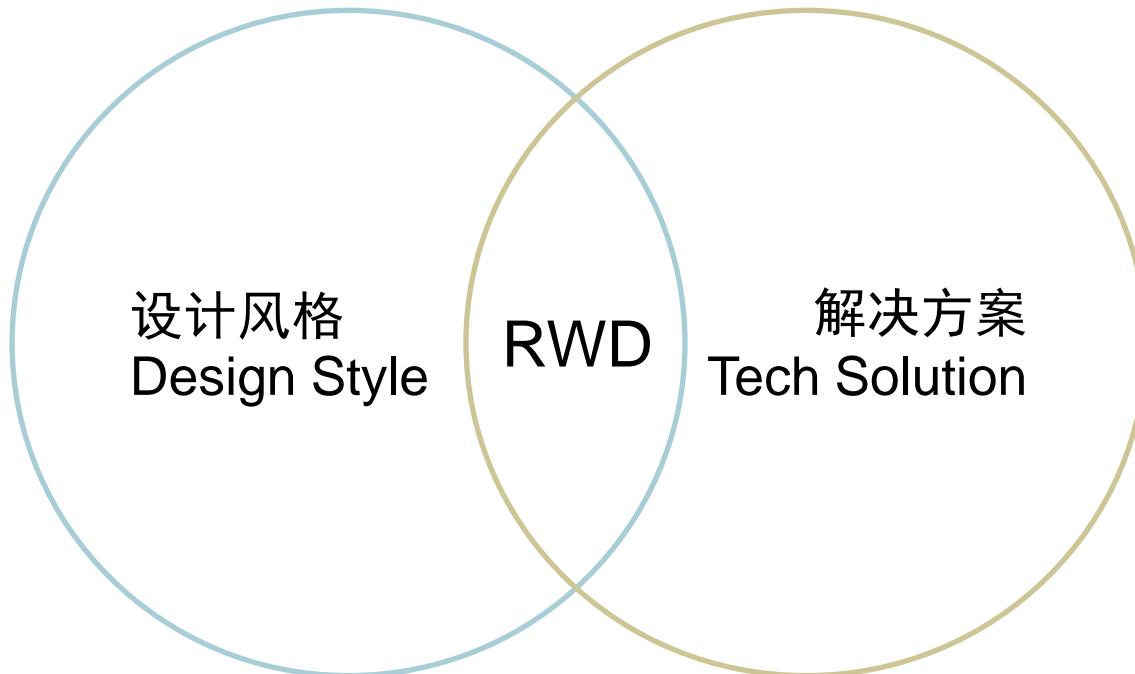
1. Base on Flexibility: RWD充分利用了web设计的灵活特性；
2. Solution: RWD是利用现有技术解决多终端兼容问题的一种方案；
3. Style: RWD由重构环节推动设计流程，本身形成了一种设计风格。

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History

History: 2000, Web is Flexible -Web的灵活性是可以利用的

"网页和打印介质的不同在于它具有打印介质没有的灵活性，我们应该接受这种灵活性并且利用它。"

"The control which designers know in the print medium, and often desire in the web medium, is simply a function of the limitation of the printed page. We should embrace the fact that the web doesn't have the same constraints, and design for this flexibility. But first, we must "accept the ebb and flow of things."

John Allsopp, 2000.4.7, *"A Dao of Web Design"*,
http://alistapart.com/article/dao

History: 2009, Mobile First 重视移动端体验
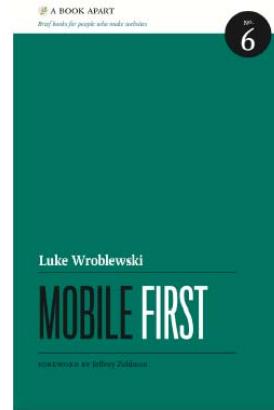
1. Mobile is exploding
2. Mobile forces you to focus
3. Mobile extends your capabilities

Luke Wroblewski, 2009.11.3, *"Mobile First"*,
http://www.lukew.com/ff/entry.asp?933

History: 2010, Theory and Practice 理论和实践

Ethan Marcotte, 2010.5.25, *"Responsive Web Design"*,
http://alistapart.com/article/responsive-web-design
Alexander Dawson, 2010.8.18, *"Mobile Web Design: Best Practices"*,
http://sixrevisions.com/web-development/mobile-web-design-best-practices

History: 2011, Performance 注意性能

Luke Wroblewski, 2011.9.12, *"RESS: Responsive Design + Server Side Components"*,
http://www.lukew.com/ff/entry.asp?1392

History: 2012, Workflow 工作流程的讨论

Mark Boulton, 2012.2.24, *"Responsive Summit: Workflow"*,
http://www.markboulton.co.uk/journal/responsive-summit-workflow

History: 2013, Performance, Optimization, Workflow

Topics on RWD SUMMIT 2013,
http://environmentsforhumans.com/2013/responsive-web-design-summit

Okay, Intro is over, engine start!

目录 Menu

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Pain Exist: Mobile Increase
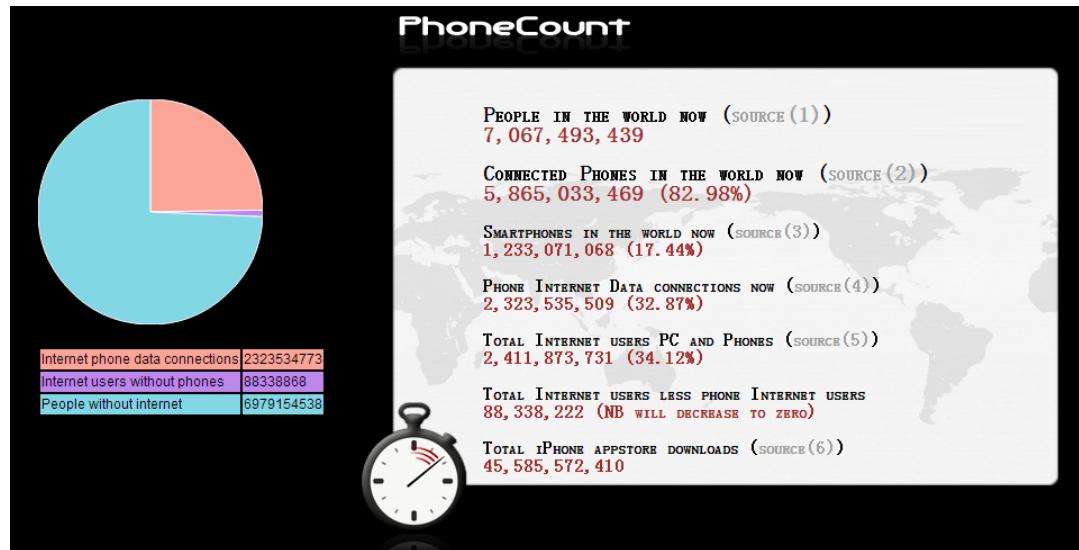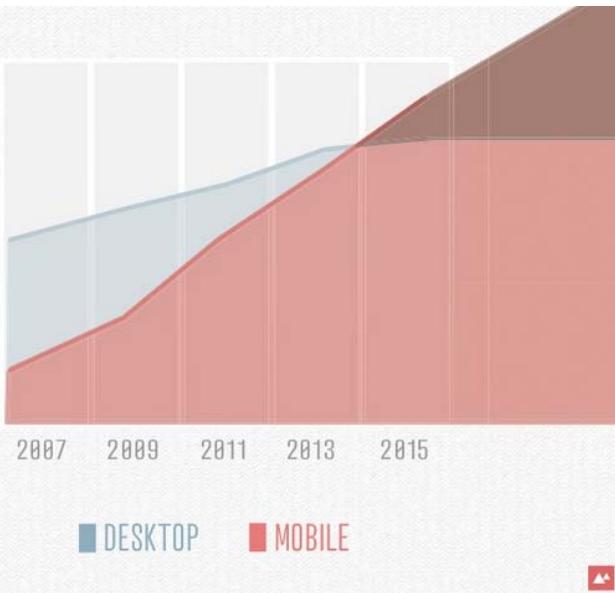
Sara Cannon, 2012.5.7, *"Responsive Design"*,
http://www.slideshare.net/saracannon/responsive-design-12837964?from_search=2
Phone Count,
http://phonecount.com/pc/count.jsp

Pain Exist: Various Resolution & Client
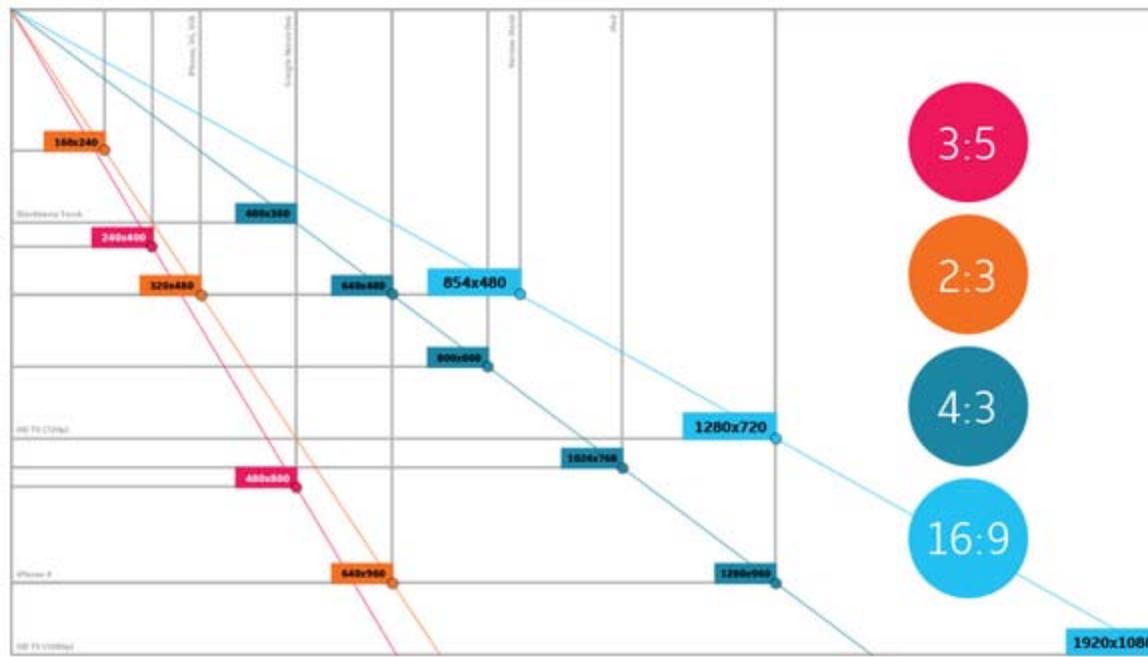
Andy Gilliland, 2011.4.1, *"Pixel Proliferation: A Toolset For Managing Screen Resolutions"*,
http://punchcut.com/perspectives/expanding-universe-toolset-managing-screen-resolutions

Pain Exist: High Cost of Separate Versions

Thomas Byttebier, 2011.11, *"Responsive web design"*,
http://www.slideshare.net/bytte/responsive-web-design-10389263?from_search=3

Essential: 2 Targets, 1 Bonus

设备适应性
Flexibility

Cool

设计开发成本
Cost

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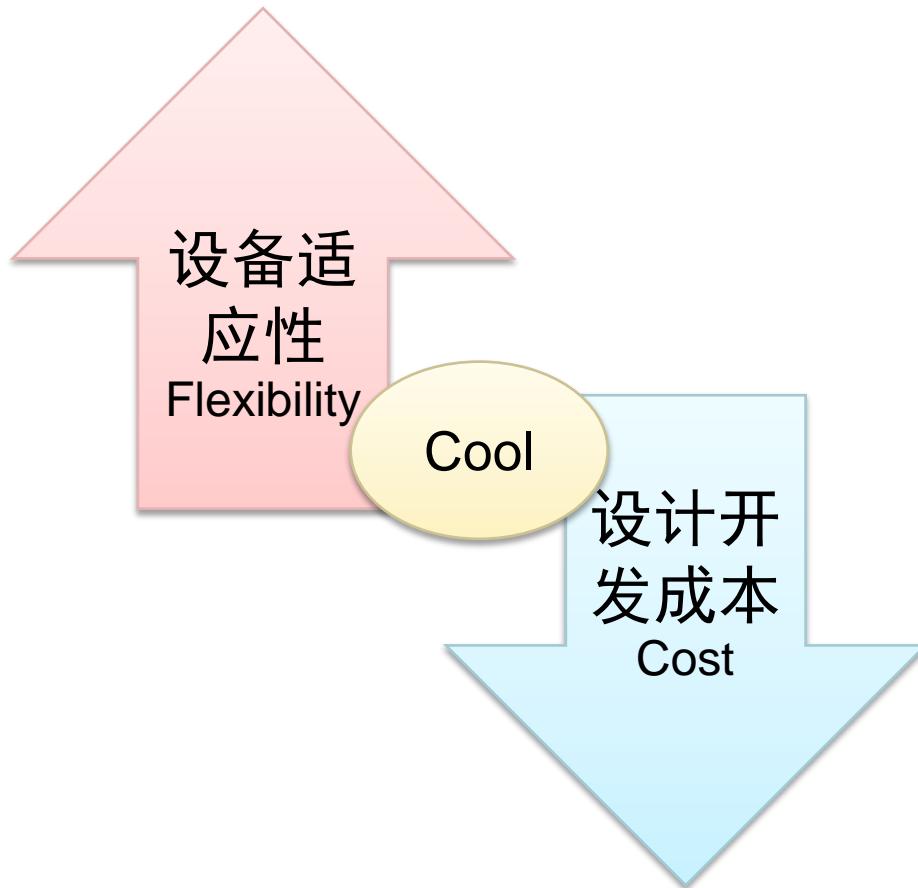
1. Aim: RWD能解决什么问题
2. Problem: RWD本身的问题和争议
3. Rules: 需要遵循的原则
4. Method: 实现RWD的方法
5. Workflow: 工作流程

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Browser Data 浏览器兼容(2013.4)

2013	Total	IE 10	IE 9	IE 8	IE 7	IE 6
April	12.7 %	2.0 %	4.4 %	5.3 %	0.8 %	0.1 %
March	12.9 %	1.3 %	5.2 %	5.5 %	0.8 %	0.2 %
February	13.5 %	0.9 %	5.7 %	5.8 %	0.9 %	0.2 %
January	14.3 %	0.8 %	5.9 %	6.4 %	1.0 %	0.3 %

微软 IE6.0: 15.83%
3.0: 17.22%
搜狗高速浏览器: 7.83%
Safari: 6.17%
微软 IE9.0: 5.2
Chrome: 3.72%
360极速浏览器:
猎豹浏览器: 1.49
QQ浏览器: 1.92%
傲游: 2.29%
火狐: 1.76%
IE7.0: 8.67%
360安全浏览器: 22.37%

1. IE8: ~~media queries~~
2. IE6: ~~max(min)-width~~
3. Graceful Degradation
   降级方案

http://www.w3schools.com/browsers/browsers_explorer.asp
http://brow.data.cnzz.com

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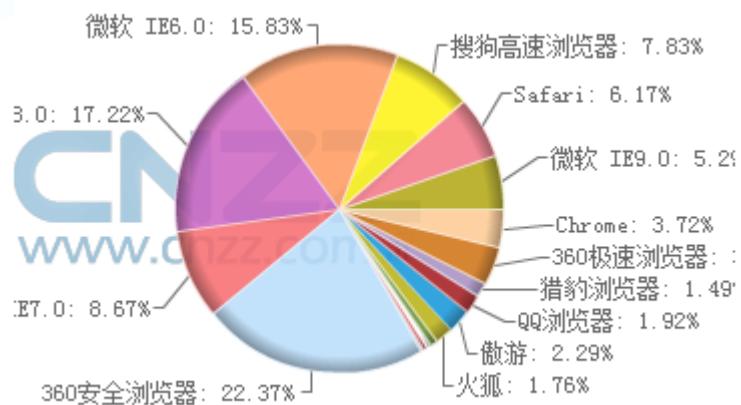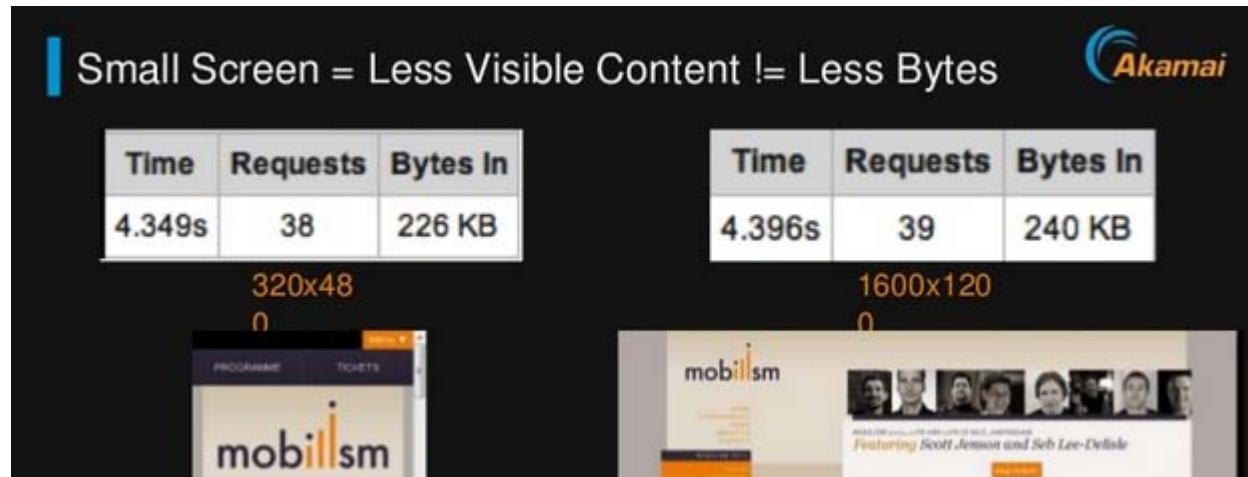
Performance 性能

1. DOM先下载后隐藏的问题；
2. 图片先下载后缩小的问题；
3. 下载额外的样式的问题
4. 优化方案

Guy Pod, 2012.4.16, *"Performance Implications of Mobile Design"*,
http://www.slideshare.net/guypod/performance-implications-of-mobile-design

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内容策略 Content Strategy

移动优先 Mobile First

Image by Thomas Byttebier, 2011.11, *"Responsive web design"*,
http://www.slideshare.net/bytte/responsive-web-design-10389263?from_search=3

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适应是响应的基础 Responsive base on Flexible

Photo©Franco Andreone *http://www.francoandreone.it*
http://www.cites.org/gallery/species/reptile/short-horned_chameleon.html

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Mobile First: Viewport设置

```
<meta name="viewport"
content="width=device-width,
initial-scale=1.0, minimum-scale=1.0, maximum-scale=1.0,
user-scalable=no" />
```

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Fixed Grid System 固定栅格系统
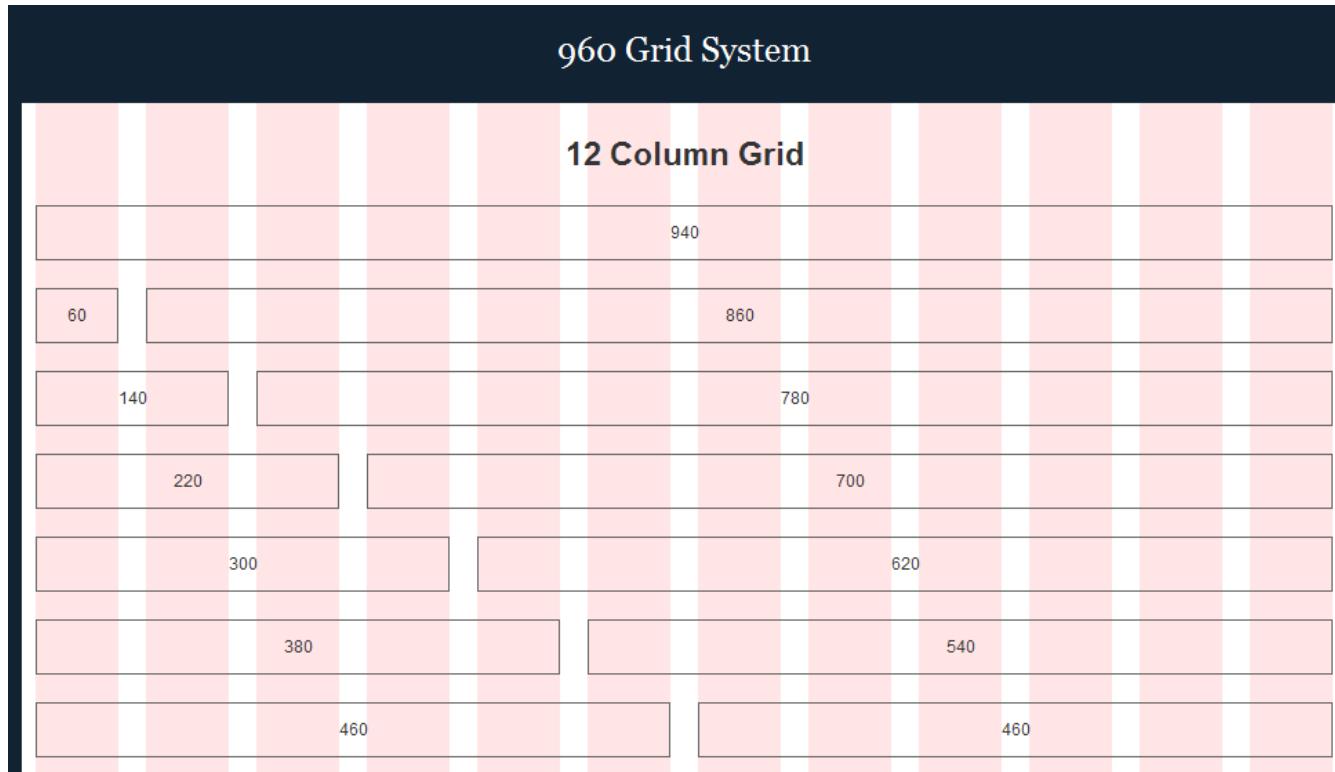
Method: 实现RWD的方法

Fluid Grids 流动栅格系统

Flexible Images 弹性图片

Max-width:100%

http://filamentgroup.com/examples/responsive-images
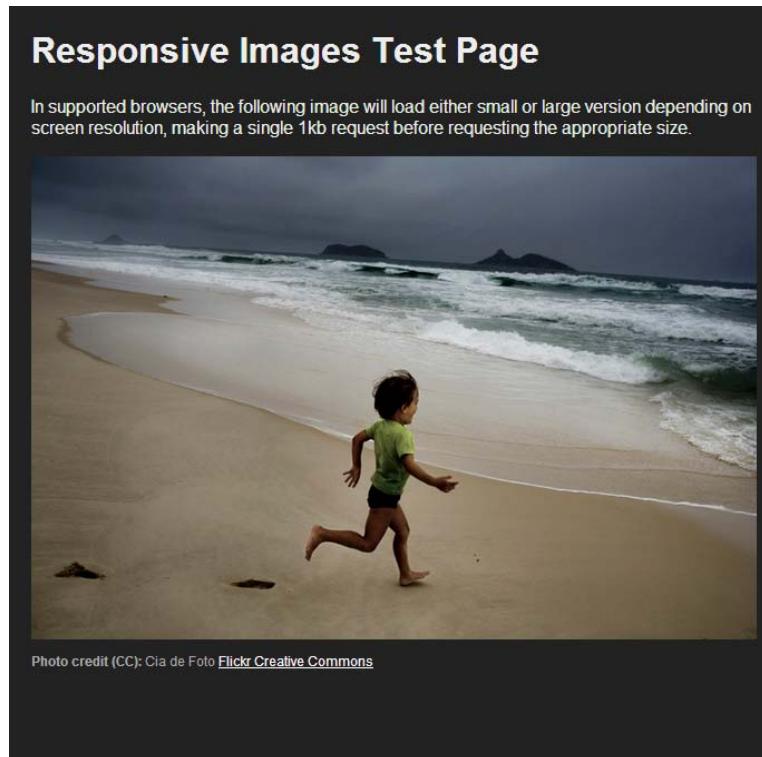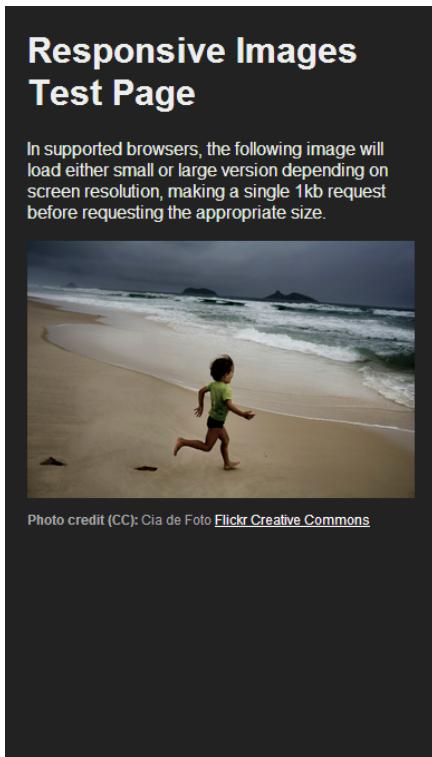
Media Queries 媒体查询

```
E{display:none}

@media only screen and (min-width: 522px){
E{ display:block; margin-bottom:30px}
}

@media only screen and (min-width: 982px){
E{ margin-bottom:50px}
}
```

breakpoint

breakpoint

Media Queries 媒体查询 breakpoint的设置 从320px开始
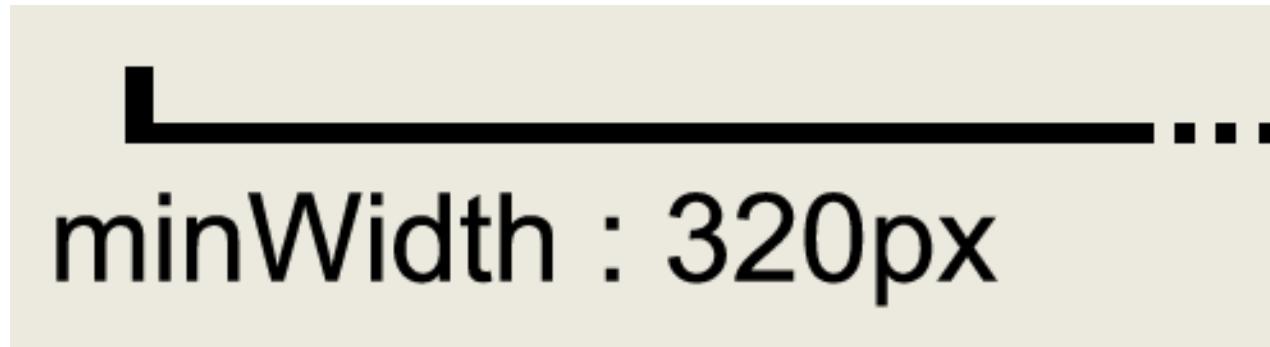
minWidth : 320px

跨平台设计需要适应的宽度范围是一个半开放区间，
最小宽度(minWidth)为320px(iPhone3GS)。

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Media Queries 媒体查询 breakpoint的设置 响应的临界值

minWidth:320   522   982   ∞

Breakpoint

1. Breakpoint指从minWidth向上设置的若干个发生视觉突变(响应)的临界值；
2. Breakpoint划分了若干区间；
3. 页面在区间内的变化为适应变化；
4. 跨区间的变化为响应变化。

Media Queries 媒体查询 breakpoint的设置 Tips

1. 一般来说，breakpoint设置2个即可，将场景划分为小(phone)、中(pad)、大(desktop)三种分辨率的设备；

2. Breakpoint的设置不依赖设备分辨率；

3. Breakpoint的设置依赖于视觉设计稿，没有视觉稿的情况下设定breakpoint是空谈。

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Media Queries 媒体查询 breakpoint的设置 一个例子
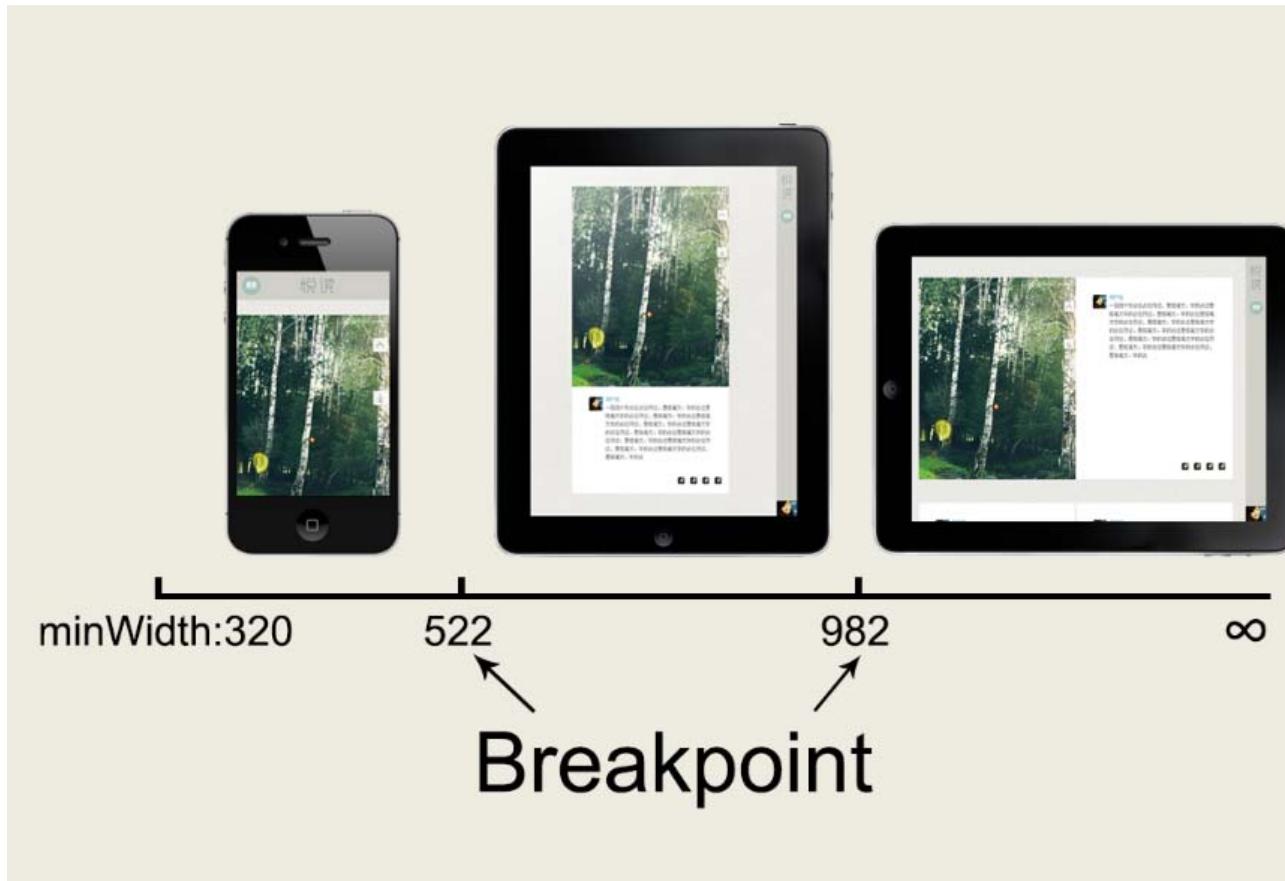
Source Order

FRIENDS
盟友

我们的故事
想法
盟友
Blog

我们的故事 | 想法 | 盟友 | Blog

触盟 Wetouch
互联专家联盟 企业触网联盟
TALKTO@WETOUCH.CN

OUR STORY
我们的故事

```
media="screen"
.m_nav {
    z-index: 100;
    -ms-flex-order: 4;
    -moz-box-ordinal-group: 4;
    -webkit-box-ordinal-group: 4;
    box-ordinal-group: 4;
    width: 100%;
}
```

```
element.style {
    display: table-footer-group;
}
```

1. Flexbox调整容器顺序；
2. Display:table调整容器顺序

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About Browser Data 关于浏览器兼容

2013	Total	IE 10	IE 9	IE 8	IE 7	IE 6
April	12.7 %	2.0 %	4.4 %	5.3 %	0.8 %	0.1 %
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1. IE8: ~~media queries~~
2. IE6: ~~max(min)-width~~
3. Graceful Degradation
   降级方案

http://www.w3schools.com/browsers/browsers_explorer.asp
http://brow.data.cnzz.com

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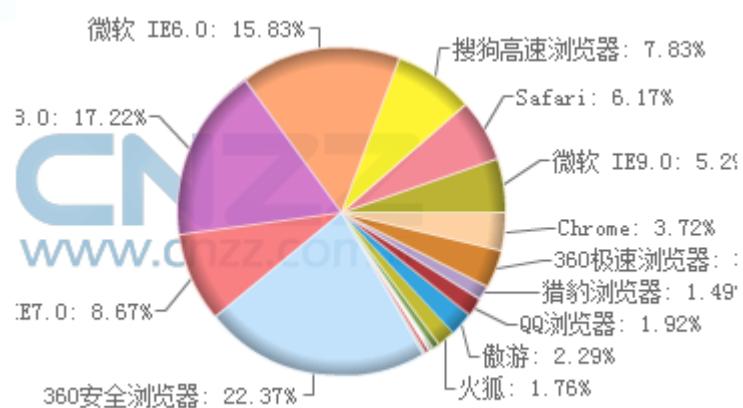
Fix IE: Content Strategy降级法
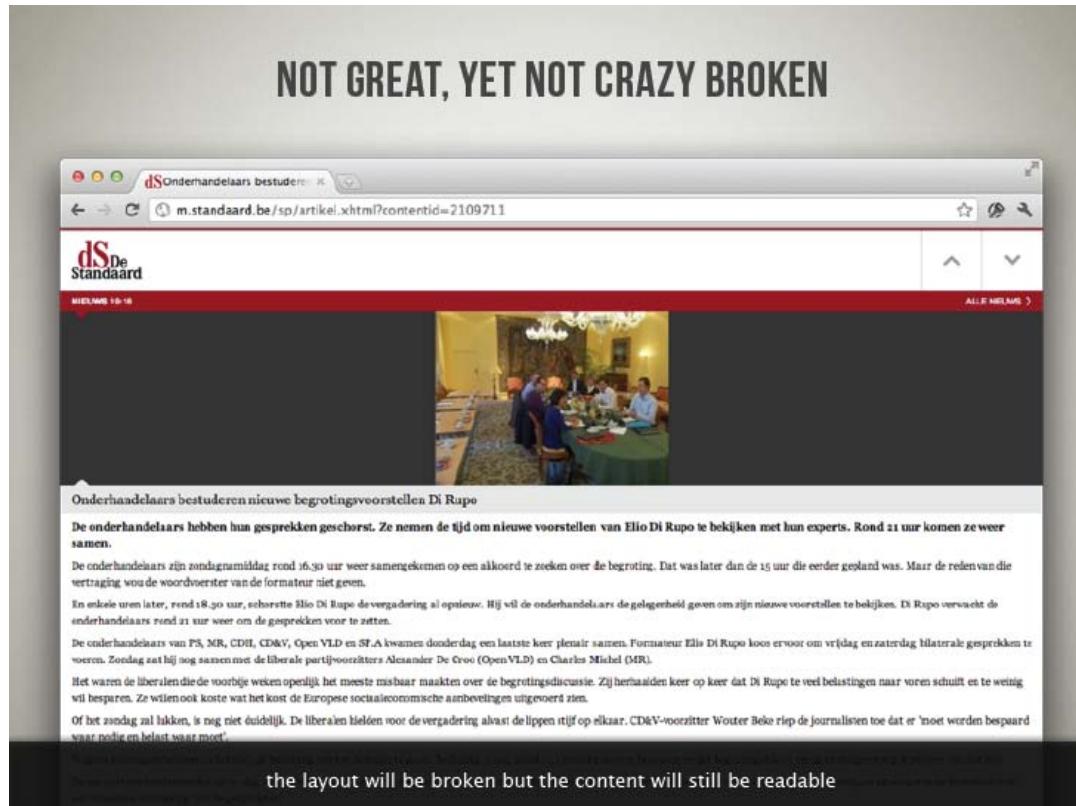
Thomas Byttebier, 2011.11, *"Responsive web design"*,
http://www.slideshare.net/bytte/responsive-web-design-10389263?from_search=3

Fix IE: Pixel-fixed降级法

```
<!--[if lte IE 8]>
<link type="text/css" rel="stylesheet" media="screen"
href="style.ie.css" />
<![endif]-->
```

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About Performance 关于性能
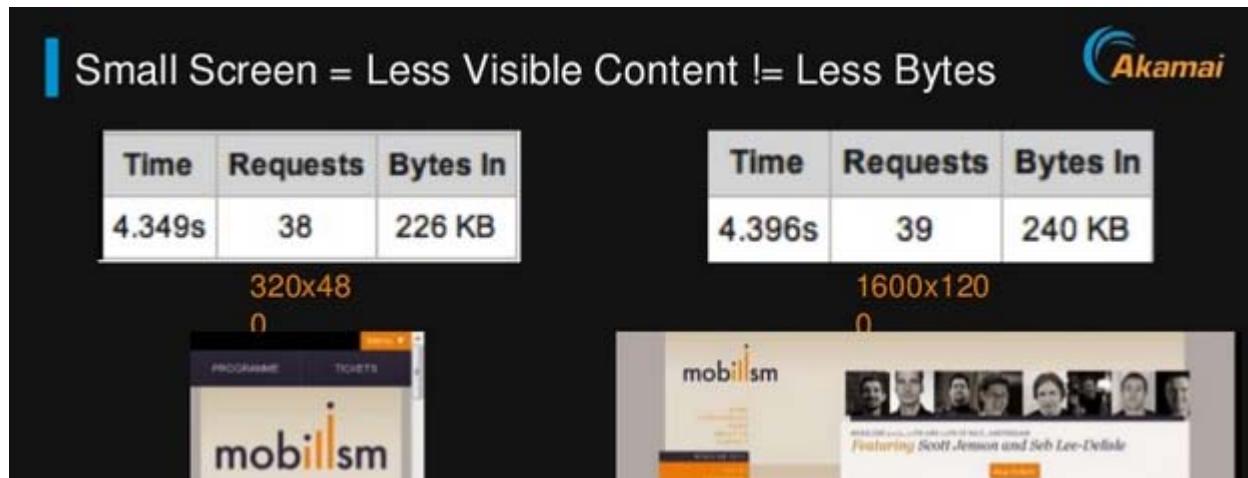
1. 结构：DOM先下载后隐藏的问题；
2. 样式：下载额外的样式的问题；
3. 资源：图片先下载后缩小的问题；
4. 优化方案

Guy Pod, 2012.4.16, *"Performance Implications of Mobile Design"*,
http://www.slideshare.net/guypod/performance-implications-of-mobile-design

RESS: Responsive Design + Server Side Components

Anders M. Andersen, 2012.5.9, *"Getting started with RESS"*,
http://www.netmagazine.com/tutorials/getting-started-ress

RESS: Responsive Design + Server Side Components

1. RESS为解决性能问题而生
2. 服务器端设备侦测；
3. 给出需要的结构、样式、资源
4. 前端分段进行RWD

Luke Wroblewski, 2011.9.12, *"RESS: Responsive Design + Server Side Components"*,
http://www.lukew.com/ff/entry.asp?1392

RESS: Responsive Design + Server Side Components
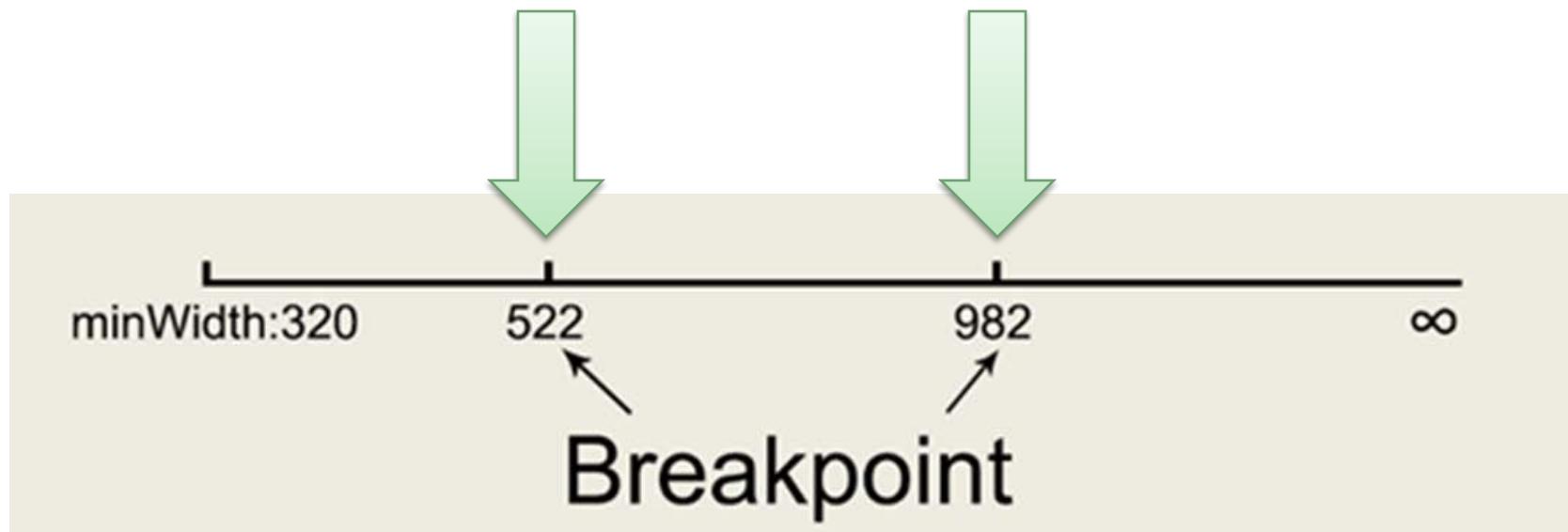
不要设置过大的适应变化范围，
RESS不建议一套代码兼容所有设备，而是分段处理

RESS: Responsive Design + Server Side Components

```
1  <body>
2  {{>header}}
3
4  [...document content...]
5
6  {{>footer}}
7  </body>
```

index.html
header.html
mobile_header.html
footer.html
mobile_footer.html

RESS对结构(Source Order)的优化

RESS: Responsive Design + Server Side Components

```php
<?php

    // grab the cookie value
    $screenWidth = $_COOKIE['RESS'];

    // set the img path var
    if ($screenWidth <= 320) {
        $imgPath = "320";
    } else if ($screenWidth < 960) {
        $imgPath = "640";
    } else {
        $imgPath = "960";
    }

    // print out our image link
    print "<img src='/rwd/images/".$imgPath."/car.jpg' alt='Car' />";

?>
```

RESS对资源的优化

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RESS: Responsive Design + Server Side Components

RESS **isn't** a silver bullet.

Dave Olsen, 2012.5.15, *"RESS: An Evolution of Responsive Web Design"*,
http://www.slideshare.net/dmolsenwvu/ress-an-evolution-of-responsive-web-design

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RESS: Responsive Design + Server Side Components

设备适应性
Flexibility

性能
Perfor-
mance

Cool

设计开发成本
Cost

?
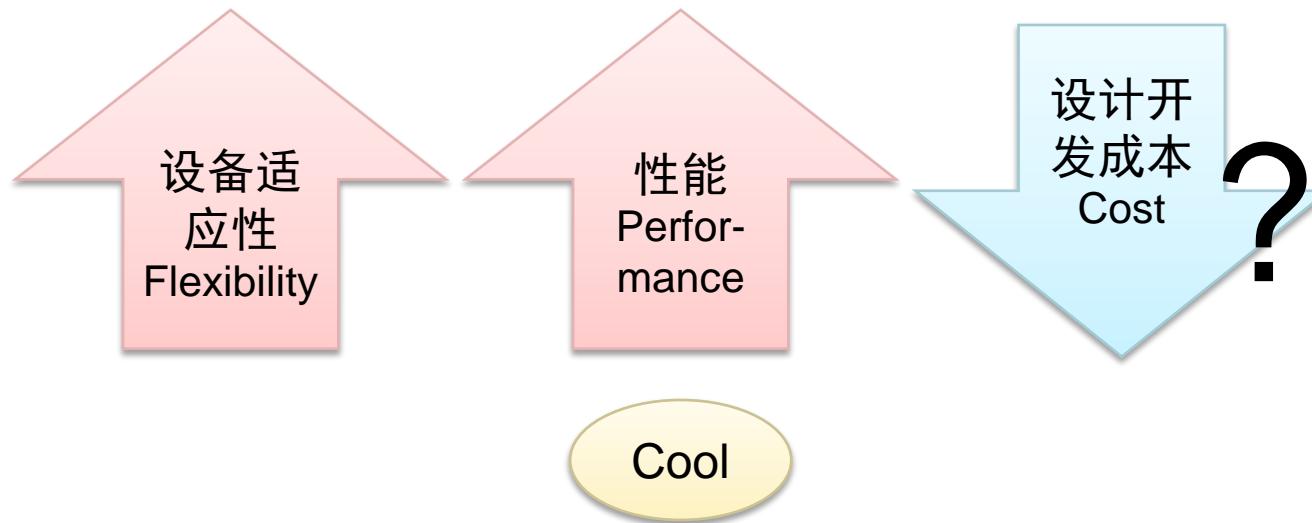
1. RESS并未消解RWD的本质，只是提出了性能的要求
2. RESS是介于SeparateVersions和OneVersionFixAll间的折中方案
3. RESS需要后端介入设计，比传统的RWD需要更紧密的沟通

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Method: 实现RWD的方法

工具 Tools: Firefox(v15+)自适应视图

工具 Tools: Chrome developer tools

工具 Tools: ScreenQueries
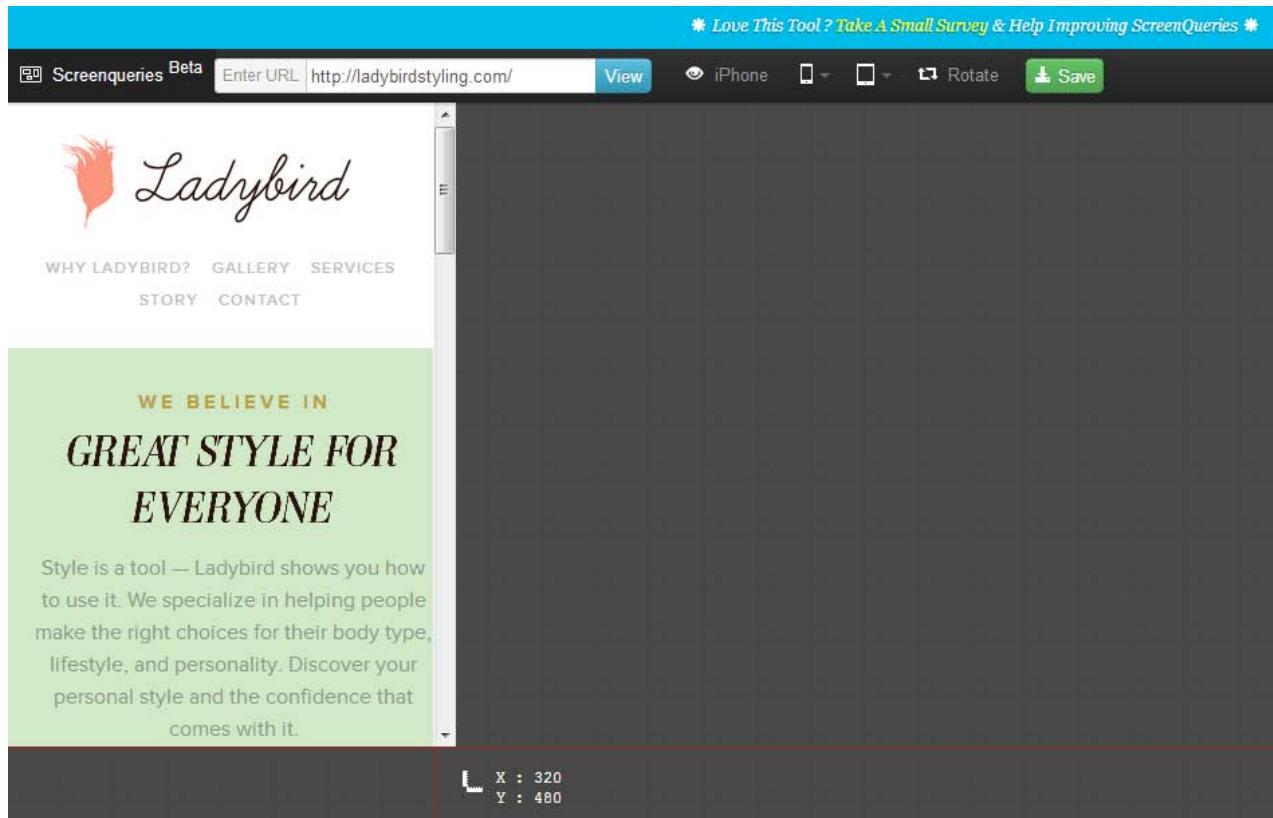
ScreenQueries
http://screenqueri.es

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Module List 模块清单

Pon Kattera, 2012.1.21, *"Design Process in the Responsive Age"*,
http://www.slideshare.net/pkattera/design-process-for-responsive-web-design
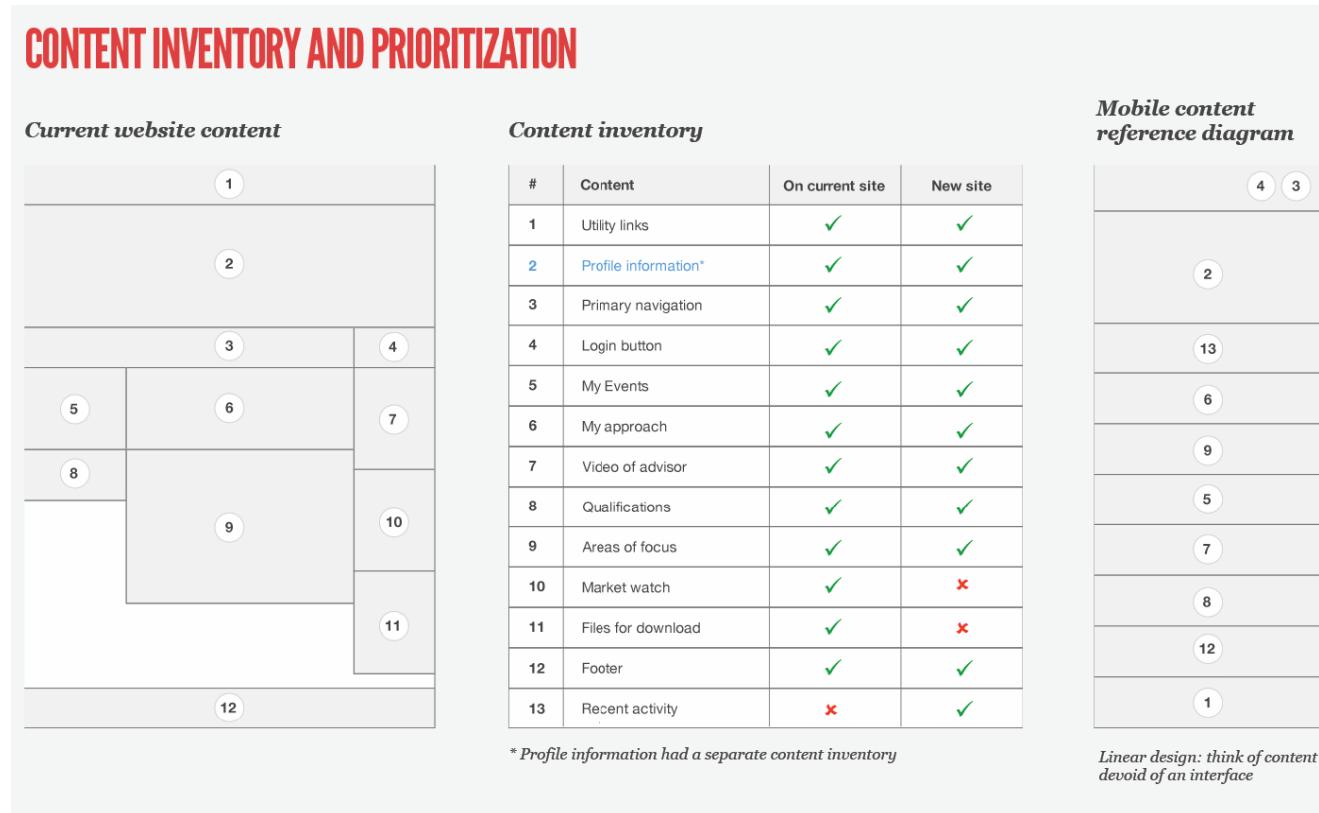
Module List 模块清单

模块名	窄(手机) 320px<width<522px	中(ipad竖屏) 522px<width<982px	宽(desktop) width>982px
1 控制面板 LOGO	有	有	有
2 控制面板 控制台	有	有	有
3 控制面板 登录态	待定	有	有
4 内容面板	有	待定	有
5 客厅 视觉区域	有	有	有
6 客厅 广播区域	有	有	有
7 客厅 图片组区域	有	有	有
8 客厅 长文区域	有	有	有
9 书房 广播框	有	有	有
10 书房 长文正文	有	有	有

WDC
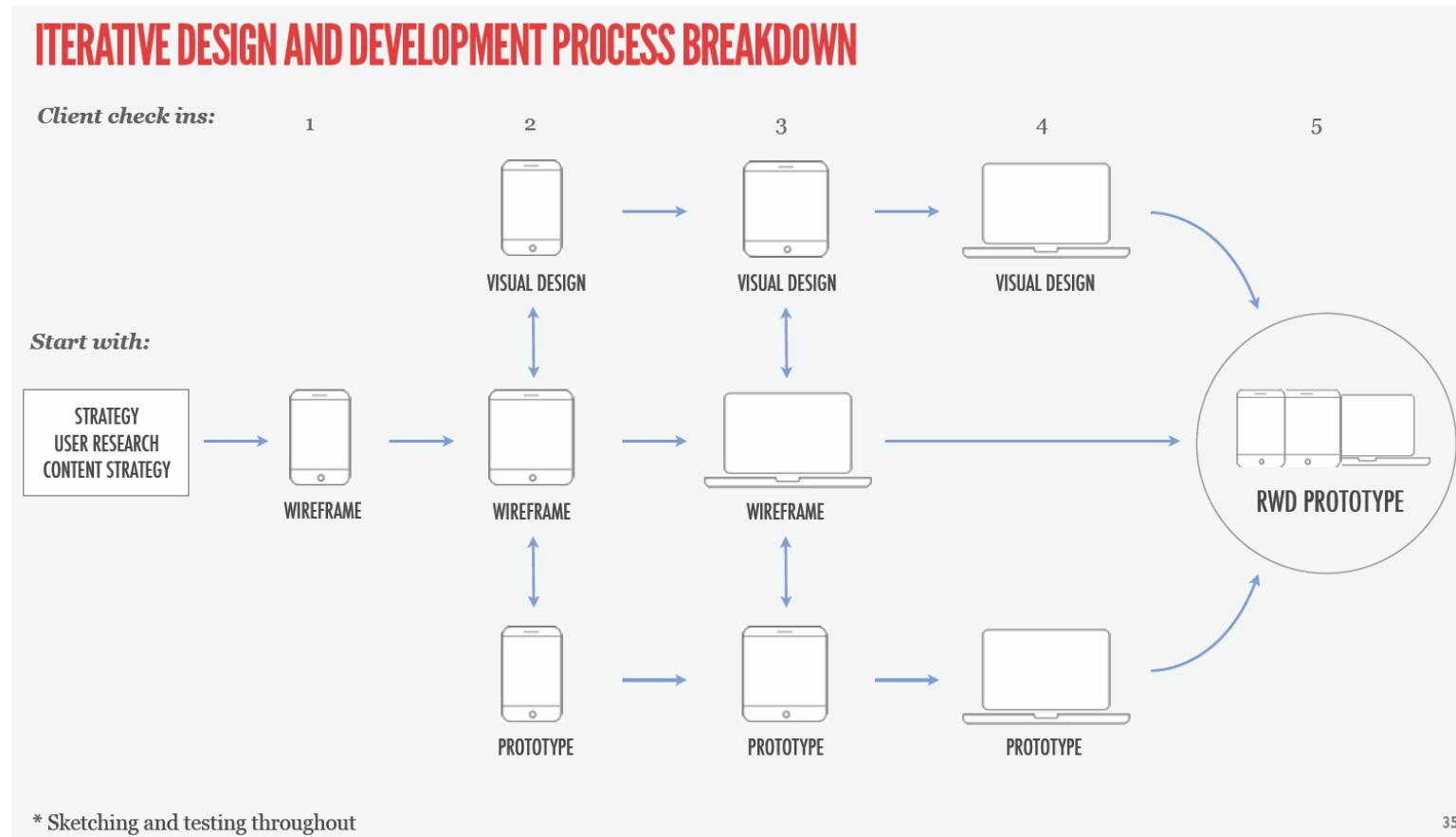
Workflow

ITERATIVE DESIGN AND DEVELOPMENT PROCESS BREAKDOWN

Pon Kattera, 2012.1.21, *"Design Process in the Responsive Age"*,
http://www.slideshare.net/pkattera/design-process-for-responsive-web-design

Workflow

1. 依照分辨率小、中、大的顺序设计；
2. 视觉稿分初稿和定稿：初稿要确定模块的位置和尺寸；
3. 较小分辨率下的初稿确定后，交付重构制作，同时设计与重构沟通大一级分辨率下的设计思路；
4. 较小分辨率下的视觉定稿与大一级分辨率下的视觉初稿同时设计，较小分辨率下的重构定稿与大一级分辨率下的重构初稿同时制作；
5. 每一级讨论后如无异议，将模块写入模块清单。

重构

视觉   交互

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Workflow: 工作流程

Workflow

```
                    RWD项目启动

        交互&视觉              重构&前端

        phone视觉初稿

    以phone视觉初稿为基础讨论pad的设计思路

         Y        Any
                Trouble?

                   N

    phone视觉定稿           phone重构初稿
    pad视觉初稿

    以phone重构初稿为基础第2次讨论pad的设计思路
    以pad视觉初稿为基础讨论desktop的设计思路

         Y        Any
                Trouble?
```

```
                                    N

    Pad视觉定稿              Phone重构定稿
    Desktop视觉初稿          Pad重构初稿

    以pad重构初稿为基础第2次讨论desktop的设计思路

         Y        Any
                Trouble?

                   N

    Desktop视觉定稿          Pad重构定稿
                           Desktop重构初稿

                           Desktop重构定稿

                              结束
```

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Responsive Web Design
2010.5-2013.5

WDC
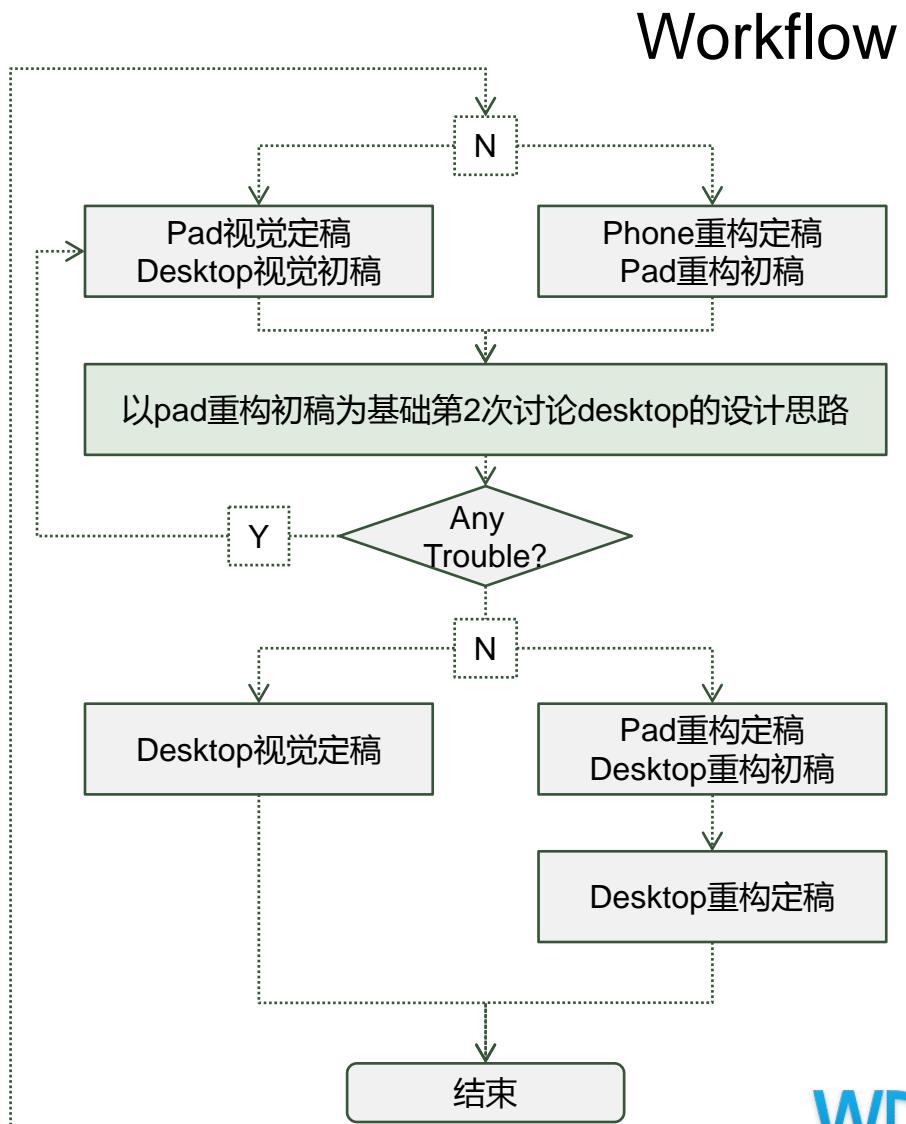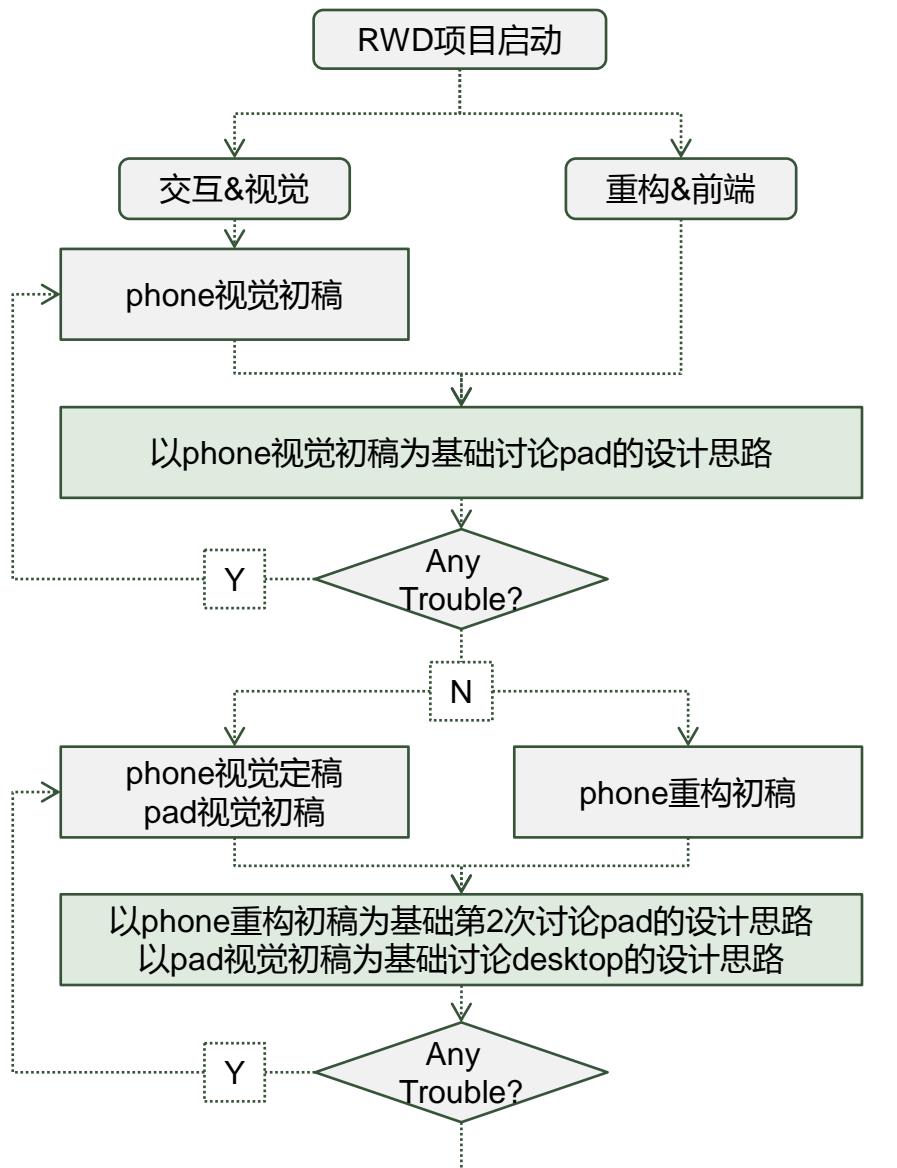
Q1：响应式设计是什么？

1. 响应式设计充分利用了web的灵活性；
2. 它是一种设计风格；
3. 它更是一种解决方案。

Q2：响应式设计要解决什么问题？

1. 如何适应分辨率层出不穷的移动设备和终端；
2. 如何降低设计开发成本。

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Q3：响应式设计的好处？

1. 一次性产出适应所有设备的prototype；
2. 在提高设备适应性，降低开发成本的基础上让网站变得更酷。

Q4：使用响应式设计的顾虑？

1. IE8（含）以下IE浏览器对某些相关css属性支持不好，需要选择适合的降级方案；
2. 注意结构、样式、资源处理不当带来的性能问题。

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Q5：如果使用响应式设计，要遵循的原则？

1. 内容策略
2. 移动优先
3. 适应是响应的基础

Q6：实现响应式设计的方法？

1. 流动栅格
2. 弹性图片和媒体
3. 媒体查询

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Q7：关于响应式设计的协作？

1. 紧密沟通
2. 及时更新模块清单
3. 小屏幕优先的设计流程

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结语 Conclusion

Tim Kadlec, 2012.10.4, *"Blame the Implementation, Not the Technique"*,
http://timkadlec.com/2012/10/blame-the-implementation-not-the-technique

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关于Rebuilder

作为设计团队中的重构工程师应该：

1．及时发现和捕捉web设计的潜能；
2．主动从web的适应性和性能的角度去影响设计环节；
3．结合技术和团队一起拓展设计方法；
4．带动整个团队的设计进步。

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附录 Resource

附录1：一些应用了RWD的网站

1. http://bradfrostweb.com/
2. http://elliotjaystocks.com/
3. http://ethanmarcotte.com/
4. http://www.facebookstories.com/
5. http://www.antarcticstation.org/
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9. http://www.openroad.ca/
10. http://www.responsivewebdesign.co.uk/
11. http://www.sequencejs.com/
12. http://www.rachelandrew.co.uk/
13. http://www.nytimes.com/skimmer/#/Top+News
14. http://www.gorilla-webdesign.be/
15. http://mediaqueri.es/
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附录2：国内关于RWD的一些文章

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4. ETHAN MARCOTTE, 2010.5.25, *"Responsive Web Design"*, http://alistapart.com/article/responsive-web-design
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7. Luke Wroblewski, 2011.9.12, *"RESS：Responsive Design + Server Side Components"*, http://www.lukew.com/ff/entry.asp?1392
8. Yiibu, 2011.9.13, *"Adaptation: Why responsive design actually begins on the server"*, http://www.slideshare.net/yiibu/adaptation-why-responsive-design-actually-begins-on-the-server
9. Thomas Byttebier, 2011.11, *"Responsive web design"*, http://www.slideshare.net/bytte/responsive-web-design-10389263?from_search=3
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11. Pon Kattera, 2012.1.21, *"Design Process in the Responsive Age"*, http://www.slideshare.net/pkattera/design-process-for-responsive-web-design
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谢谢！

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