



Advanced CSS Layout Techniques

Dan Popa (dpopa@adobe.com)



A Dying Age

- CSS does a poor job of the fundamentals of page layout
- Until now we've got by with tables, floats, relative positioning and negative margin tricks, but we still have to work incredibly hard to produce anything beyond the fairly standard two- to three-column layouts.
- **Issues:**
 - Layout depends on content structure and order
 - Bloated source code, unnecessary tags
 - Accessibility issues
 - Easy to break
 - Hard to maintain
 - Browser quirks

- Structural markup – *"code what you mean, mean what you code"*
- Advantages of CSS Layouts:
 - Design is easy, less expensive to create, much easier to maintain
 - Easy responsive design
 - Easy to target different devices (print, mobile, tablets)
 - Better Accessibility
 - Better SEO

- **CSS Template Layout Module:** specify grid-based layout in an ASCII-art-like way.
- **CSS Flexible Box Layout Module:** specifies rules to lay out the children of a box.
- **CSS Multi-column Layout Module:** allows content to flow into equal height columns.
- **CSS Regions:** allows content to flow in multiple disjointed boxes
- **CSS Grid Layout Module:** partition an element into a grid of rows and columns

CSS Template Layout Module - Presentation

- A **"template"** defines one or more **"slots"** that an element's content can flow into using the **display** CSS property.
- The elements are positioned by mapping them into slots using the **position** CSS property:

```
<form action="." />
  <label id="label1">Enter min. . .:</label>
  <input id="field1" name="field1">
  <label id="label2">Enter max. . .:</label>
  <input id="field2" name="field2">
  <input id="button1" type="submit" value="OK">
  <input id="button2" type="reset" value="Reset">
</form>
```

Enter minimum value:

Enter maximum value:

```
form {
  width: 400px;
  display: "abb" /12px
    "cdd"
    ".ef"
    12px * 200px;
}
#label1 { position: a }
#field1 { position: b }
#label2 { position: c }
#field2 { position: d }
#button1 { position: e }
#button2 { position: f }
```

- **Complex Web pages**

- with multiple navigation bars in fixed positions, areas for advertisements, etc.
- with multiple regions, where the style of the text does not only depend on the type of element it comes from, but also on the region it is displayed in.

- **Complex forms**

- where the alignment of labels and form fields may be easier with the properties of this module than with the properties for tables and margins.

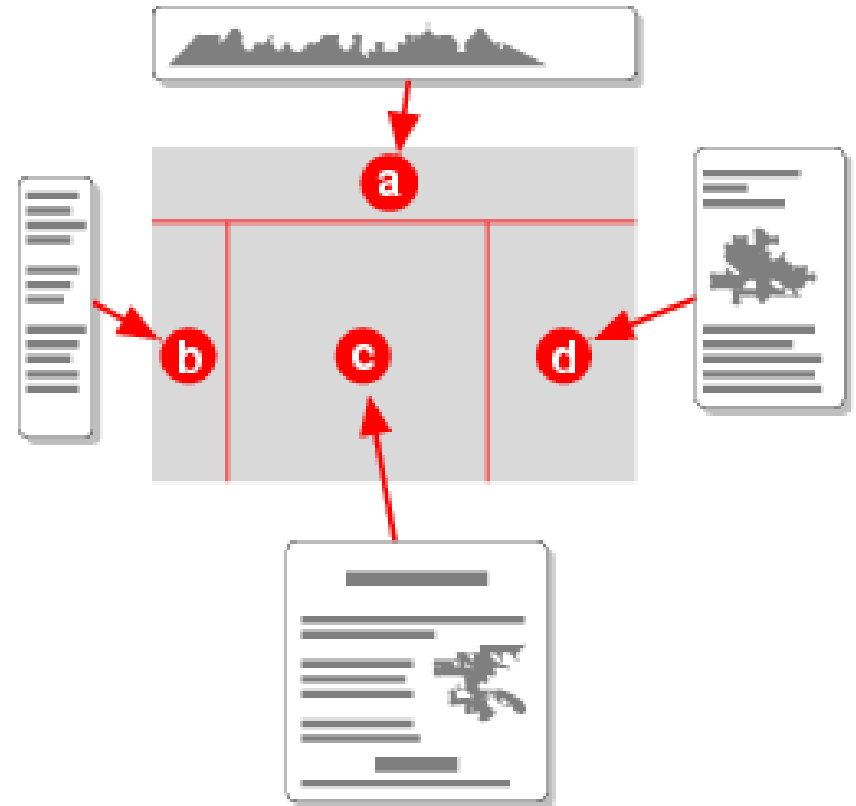
- **GUIs**

- where buttons, toolbars, labels, icons, etc., are aligned in complex ways and have to stay aligned (and not wrap, for example) when the window is resized.

CSS Template Layout Module – Examples 1

- The '::slot' selector allows elements to be styled differently based on which slot they appear in and also to style the slots themselves:

```
<style type="text/css">
#layout {
  display: "aaaa"
    "bccd";
}
#header { position: a }
#leftside { position: b }
#content { position: c }
#rightside { position: d }
#layout::slot(a) {
  background-color: red;
}
p::slot(a) {
  background-color: lime;
}
</style>
<div id="layout">
  <div id="header">A</div>
  <div id="leftside">B</div>
  <div id="rightside">D</div>
  <div id="content">C</div>
</div>
```



CSS Template Layout Module – Spec Status and Browser Support

- CSS Template Layout Module – Working Draft

- <http://www.w3.org/TR/css3-layout/>

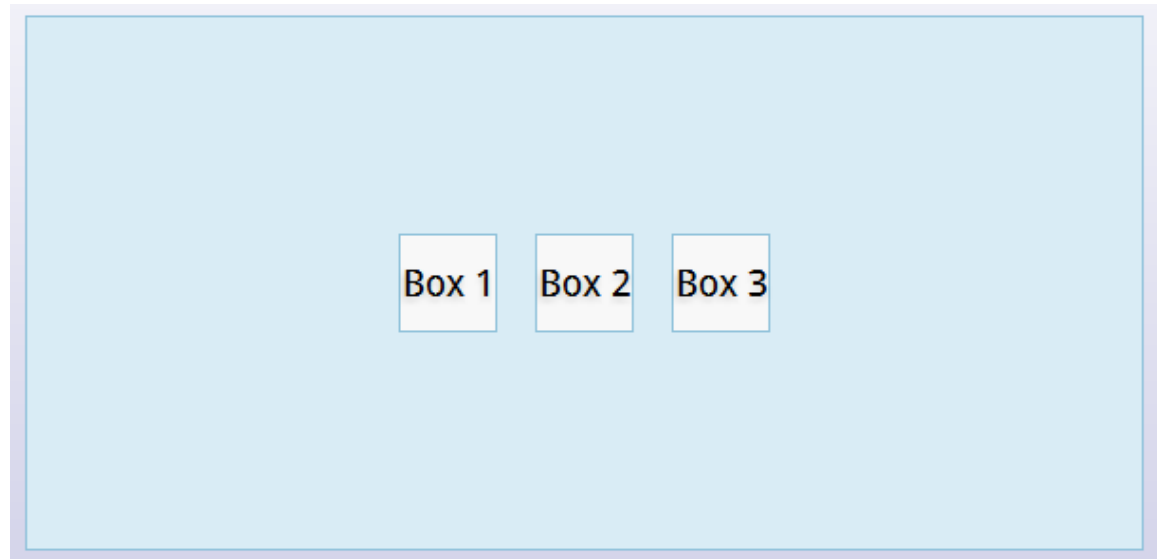
- Actively developed:

2011-11-29	2010-04-29	2009-04-02	2007-08-09	2005-12-15
----------------------------	----------------------------	----------------------------	----------------------------	----------------------------

- Acest modul se afla in procesul de combinare cu Grid Layout Module
- **NO** browser support
- JavaScript support: a jQuery plugin which implements the spec.

CSS Flexible Box Layout Module – Presentation 1

- The children of a box are laid out either horizontally or vertically
- Unused space can be assigned to a particular child or distributed among the children.
- Boxes can be nested to build layouts in two dimensions.
- An element is a Flexible Box if you set the display CSS property to 'flexbox'.



CSS Flexible Box Layout Module – Properties 1

- Styles used on the flexbox:
 - display
 - Values: [flexbox | inline-flexbox]
 - flex-flow
 - Values: [row | row-reverse | column | column-reverse] [wrap | wrap-reverse]

CSS Flexible Box Layout Module – Properties 2

- `flex-line-pack`
 - Values: **start** | end | center | justify
- `flex-pack`
 - Values: **start** | end | center | justify

CSS Flexible Box Layout Module – Properties 3

- Styles used on the flexbox's children
 - flex-align
 - Values: start | end | center | baseline | **stretch**
 - flex-order
 - Value: <number>
 - The flex() function
 - Values: flex([<pos-flex> <neg-flex>?]? || <preferred-size>?)
 - Make the flexbox items "flex", altering their width or height to fill the available space.

CSS Flexible Box Layout Module - Uses

- Complex applications and webpages
- This box model gives a simple way to solve the usual problems in web design
 - form layout
 - page footers
 - vertical centering
 - disassociation of visual flow from HTML flow
 - suitable for various screen sizes across different devices.

CSS Flexible Box Layout Module – Example 1

▼<style>

```
.box {  
  width: 350px;  
  height: 95px;  
  border: 1px solid #555;  
  font: 14px Arial;
```

```
  display: flexbox;  
  box-orient: horizontal;  
}
```

```
.box > div {  
  box-flex: 1;  
}
```

```
.box > div:nth-child(1){ background : #FCC; }  
.box > div:nth-child(2){ background : #CFC; }  
.box > div:nth-child(3){ background : #CCF; }
```

</style>

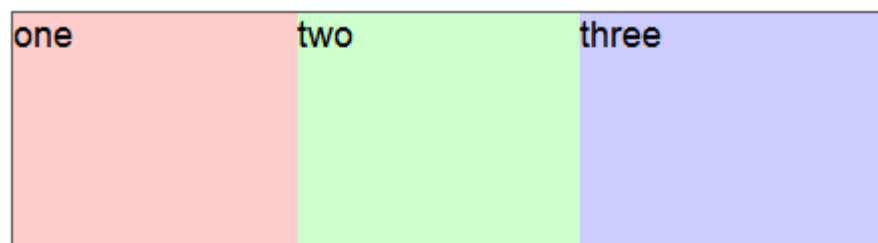
▼<div class="box">

<div>one</div>

<div>two</div>

<div>three</div>

</div>



CSS Flexible Box Layout Module – Spec Status and Browser Support

- CSS Template Layout Module – Working Draft
- <http://www.w3.org/TR/css3-flexbox/>
- Actively developed by all major browser vendors (Google, Microsoft, Mozilla, Apple)

<u>WD</u> <u>2012-03-22</u>	<u>WD</u> <u>2011-11-29</u>	<u>WD</u> <u>2011-03-22</u>	<u>WD</u> <u>2009-07-23</u>
--------------------------------	--------------------------------	--------------------------------	--------------------------------

- Browser support:

IE	Firefox	Chrome	Safari	iOS Safari	Android Browser
10.0 -ms-	2.0 -moz-	4.0 -webkit-	3.1 -webkit-	3.2 -webkit-	2.1 -webkit-

- **JavaScript solution for IE: FlexIE**

- **Content can be flowed into multiple columns with a gap and a rule between them.**
- Content can flow from one column to another, and the number of columns can vary depending on the size of the viewport.
- Can be used on newspaper, magazines like sites

- **column-count**

- Values: [<integer> | auto]
- Default: auto

- **column-gap**

- Values: [<length> | normal]
- Default: normal (1em)

- **column-rule**

- Values: [<'column-rule-width'> || <'column-rule-style'> || [<'column-rule-color'> | transparent]

CSS Multi-column Layout Module – Example

```
▼<div style="column-count: 4; ">
```

```
▼<p>
```

```
"Lorem ipsum dolor sit amet, consectetur adipiscing elit. Suspendisse sagittis laoreet justo id blandit. Proin scelerisque, massa vel sodales feugiat, felis lectus dignissim tortor, porta convallis leo ..."
```

```
</p>
```

```
</div>
```

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Suspendisse sagittis laoreet justo id blandit. Proin scelerisque, massa vel sodales feugiat, felis lectus dignissim tortor, porta convallis leo mauris vitae dui. Pellentesque et lacus in risus ultrices auctor. Donec eget tortor diam. Praesent consectetur accumsan tortor, in bibendum mi tristique id. Quisque pretium mattis pulvinar. Nunc quis metus tellus. Aliquam erat volutpat.

Cras ut sapien nunc, eget venenatis mauris. In et sem mauris, sed fermentum lorem. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos. Proin vel augue tortor. Suspendisse consectetur, velit at adipiscing porta, ipsum mauris accumsan massa, sed placerat dolor eros at elit. Integer id lacus tortor, id egestas neque. Cras iaculis faucibus sapien, auctor vulputate dui hendrerit volutpat. Cras interdum malesuada ultricies.

Fusce volutpat porttitor magna ac tincidunt. Aenean iaculis dignissim sem vitae vehicula. Aliquam quis est urna, vel laoreet mauris. Aliquam quam ligula, congue vitae consectetur in, interdum mollis neque. Nullam euismod est congue magna condimentum suscipit. Integer mattis diam non massa tempor vel ultricies mauris gravida. Sed tempus dui a urna malesuada sed dictum turpis porta. Phasellus sed augue lectus. Pellentesque habitant morbi tristique

senectus et netus et malesuada fames ac turpis egestas. Quisque egestas fringilla nunc, ut pulvinar mi auctor sed. Phasellus a tortor enim. Sed in quam felis. Pellentesque pulvinar eros porttitor orci ultricies at mollis urna semper. Morbi in orci vel purus molestie egestas. Quisque mi elit, porttitor in cursus rhoncus, ultrices eget lectus. Aenean odio eros, rutrum ut feugiat convallis, dictum et diam.

CSS Multi-column Layout Module – Spec Status and Browser Support

- CSS Multi-column Layout Module – Candidate Recommendation
- <http://www.w3.org/TR/css3-multicol/>
- Actively developed:

PR 2011	<u>CR</u> <u>2011-04-12</u>	<u>CR</u> <u>2009-12-17</u>	<u>LC</u> <u>2009-06-30</u>	<u>WD</u> <u>2007-06-06</u>	<u>WD</u> <u>2005-12-15</u>	<u>WD</u> <u>2001-01-18</u>	<u>WD</u> <u>1999-06-23</u>
------------	---------------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------	--------------------------------

- Browser support:

IE	Firefox	Chrome	Safari	Opera	iOS Safari	Opera Mobile	Android Browser
10.0	2.0 -moz-	4.0 -webkit-	3.1 -webkit-	11.1	3.2 -webkit-	11.1	2.1 -webkit-

- **Allows content to flow across multiple areas called regions**
- The regions are not necessarily contiguous in the document order.
- Used for complex layouts:
 - Magazine
 - Newspaper

- Divide up space in several regions in a table like layout
 - Regions can be of different sizes (non-uniform) and occupy several cells in the grid.
- You don't need mark-up to obtain a TABLE like layout
- Used for complex, interactive applications
- Although more verbose than the Template Layout, is supported by IE10 and the Metro UI.

CSS Grid Layout – Examples 1

```
▼<style type="text/css">
```

```
#grid {  
  display: grid;  
  grid-columns: auto minmax(min-content, 1fr);  
  grid-rows: auto minmax(min-content, 1fr) auto;  
}
```

```
#title { grid-column: 1; grid-row: 1 }  
#score { grid-column: 1; grid-row: 3 }  
#stats { grid-column: 1; grid-row: 2; grid-row-align: start }  
#board { grid-column: 2; grid-row: 1; grid-row-span: 2 }  
#controls { grid-column: 2; grid-row: 2; grid-column-align: center }
```

```
</style>
```

```
▼<div id="grid">
```

```
<div id="title">Game Title</div>
```

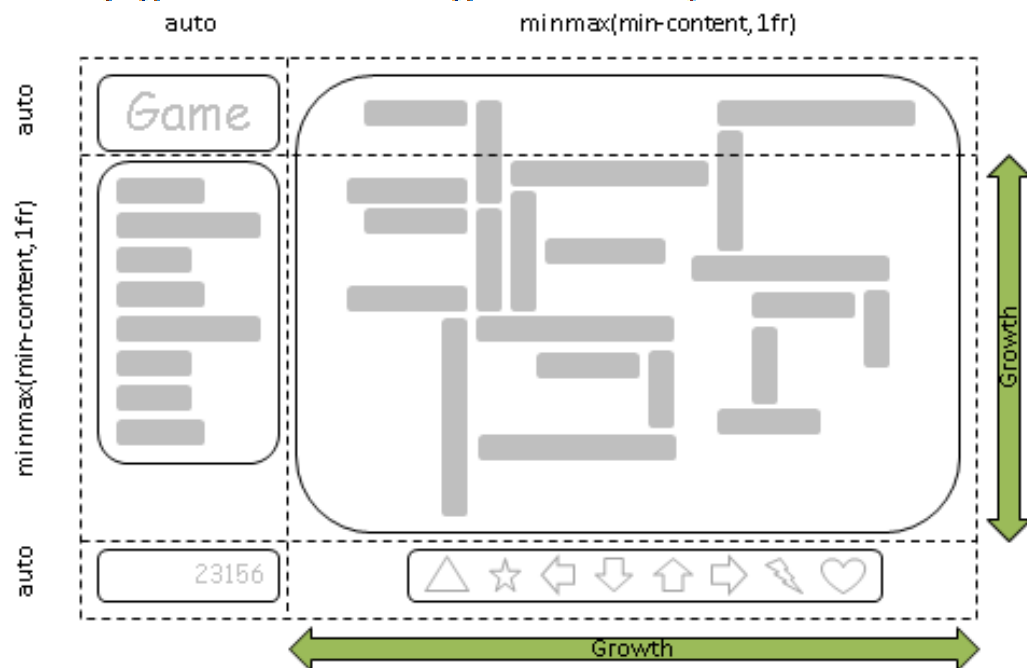
```
<div id="score">Score</div>
```

```
<div id="stats">Stats</div>
```

```
<div id="board">Board</div>
```

```
<div id="controls">Controls</div>
```

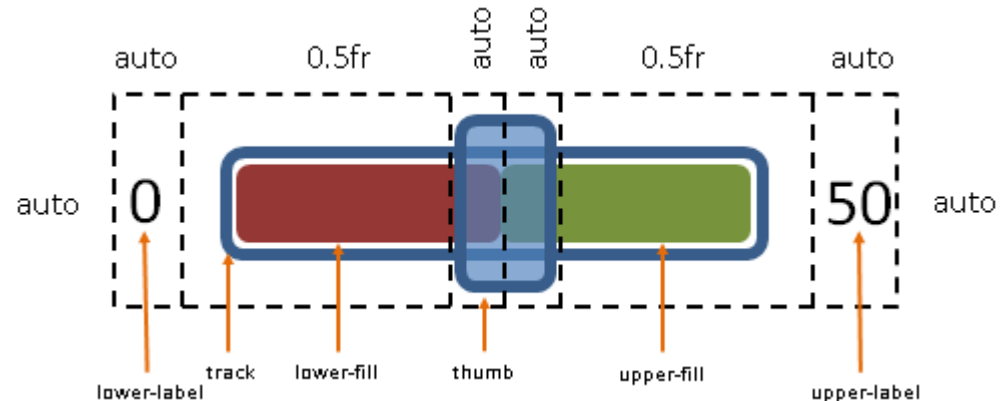
```
</div>
```



CSS Grid Layout – Named Grid Columns

```
▼<style type="text/css">
  #grid {
    display: grid;
    grid-columns:
      "start"      auto
      "track-start" 0.5fr
      "thumb-start" auto
      "fill-split"  auto
      "thumb-end"   0.5fr
      "track-end"   auto
      "end";

    #lower-label { grid-column: "start" }
    #track        { grid-column: "track-start" "track-end"; grid-row-align: center }
    #upper-label  { grid-column: "track-end"; }
    #lower-fill   { grid-column: "track-start" "fill-split"; grid-row-align: center; grid-layer: 5 }
    #upper-fill   { grid-column: "fill-split" "track-end"; grid-row-align: center; grid-layer: 5 }
    #thumb        { grid-column: "thumb-start" "thumb-end"; grid-layer: 10 }
  }
</style>
▼<div id="grid">
  <div id="lower-label">Lower Label</div>
  <div id="upper-label">Upper Label</div>
  <div id="track">Track</div>
  <div id="lower-fill">Lower Fill</div>
  <div id="upper-fill">Upper Fill</div>
  <div id="thumb">Thumb</div>
</div>
```



CSS Grid Layout – Spec Status and Browser Support

- CSS Grid Layout – Working Draft
- <http://www.w3.org/TR/css3-grid-layout/>
- Developed: 2011-04-07
- Browser support: IE 10.0

Scenario – BC.com Home Page Using Template Layout

```
<body id="page-home">
  <div class="adobe-header">
    <div class="wrap-954px">
      <div class="adobe-logo"></div>
      <ul class="adobe-nav"></ul>
      <div class="adobe-search-site"></div>
      <ul class="adobe-nav-horiz"></ul>
    </div>
  </div>
  <div style="clear: both;"></div>
  <div id="skel-content">
    <div id="skel-hero">
      <div class="wrap-954px">
        <div class="hero-header"></div>
        <a href="http://player.vimeo.com/video/"></a>
        <div class="hero-text"></div>
      </div>
    </div>
    <div class="wrap-954px">
      <div id="skel-wrapper" class="l1 wrapper">
        <h2 id="what-is-bc-h2">What is Business Catalyst?</h2>
        <div class="col-1" id="what-is-bc-image"></div>
        <div class="col-2" id="what-is-bc-text"></div>
      </div>
      <div class="col-1">
        <h2 class="margin">Why use Business Catalyst?</h2>
        <div class="wrap-col-2">
          <div class="col"></div>
          <div class="col"></div>
        </div>
        <div class="sign-up"></div>
        <h2>Recent Blog Posts</h2>
        <ol class="blogsitesummary"></ol>
      </div>
      <div class="col-2">
        <h3>Partner Stories</h3>
        <ul id="testimonials"></ul>
        <div class="box-form mbox"></div>
      </div>
    </div>
  </div>
  <div id="skel-footer">
    <div class="wrap-954px">
      <div class="col"></div>
      <div class="col"></div>
      <div class="col"></div>
      <div class="col"></div>
      <div class="col" id="copyright-info"></div>
    </div>
  </div>
</body>
```

```
#skel-wrapper1 {
  display:
    "aaaaa"
    "bbb.c"
    "dddd"
    "eee.f"
    "g.h.f"
    "iii.f"
    "jjj.f"
    320px 30px 280px 20px 310px;
}
#what-is-bc-h2 {position:a;}
#what-is-bc-images {position:b;}
#what-is-bc-text {position:c;}
#hr {position:d;}
#why_use_bc {position:e;}
#partner_stories_col2 {position:f;}
#why-col-1 {position:g;}
#why-col-2 {position:h;}
#sign-up {position:i;}
#recent_posts {position:j;}
```

What is Business Catalyst?

BC is a hosted application for building and managing online businesses. Using our unified platform and without backend coding, you can build everything from an e-commerce website to powerful online stores, e-newsletters, and e-commerce sites to lead generation mini-sites.

[Take the Tour](#)

Why use Business Catalyst?

Online Businesses, Not Websites.

Gone are the days of building simple websites. Clients are demanding more functionality and better results from their websites. They want a website with business functionality that fulfills business goals. They want an Online Business, and that's BC's specialty. In fact, Online Businesses have been our vision since 2004.

Goodbye Coding Costs. Hello Higher Profits.

Say goodbye to manually integrating multiple systems. Integrating tens of plug-ins to suit a single client. Using our all-in-one system you can build powerful Online Businesses, slash development time and streamline your workflow, saving you a whole lot of money and a whole lot of stress.

Build Beautiful Sites, Your Way.

Many systems have complicated or restrictive theme systems to learn if you want to customize a site. With Business Catalyst, we've turned that on its head - you design what you like in HTML and CSS, and then insert our modules into your design.

Plans Your Clients can Grow Into.

Sometimes clients just want to start with something basic. With BC, you can start them off on a basic web hosting plan, and then upgrade them at any time into a complete Online Business solution. Seamlessly. BC is one platform you need, from basic sites through to those big jobs that you can really sink your teeth into.

90% of Partners Surveyed: BC Meets All the Needs of Their Clients.

In a recent Partner satisfaction survey, 90% of Partners who built BC Businesses with Business Catalyst said that the platform meets all the needs of most of the projects they go. By consolidating their clients on a single platform, they can reduce support and training costs and reduce implementation time.

Professional Infrastructure, Zero Maintenance.

No more headaches about uptime, server updates or installing the latest patches - our expert team of support pros will take care of that. Because we fully host and manage you and your customers get all updates to our system automatically.

Partner Stories

"An easy to use, feature rich content management system like BC will give you the power to grow your website, affordably and seamlessly - BC takes all the boxes, and continue to lock them."

[Read more](#)

Jo Margavel
Jo Design

"There is no doubt the platform has reduced our deployment time and resource requirements up to 20%."

[Read more](#)

Russell Owen
Online Marketing Collective

"Business Catalyst has allowed us to drastically reduce our sales cycle by nearly 100%, to within only 2 or 3 conversations, instead of 2 or 3 months."

[Read more](#)

Gary Grass
Vital Media

"BC has allowed us to slash our development time and cost by over 50%."

[Read more](#)

Michael Darrin
Spinfire (MDK Interactive)

Join BC for Free

Stay up-to-date with BC

Full Name

Email Address

[Subscribe](#)

Recent Blog Posts

Updated order and cart management in R172
[Online Announcement 11/26/2012](#)

R172.0.2 - System Update including fixes on order management, photo galleries popups and other bug fixes
[Online Announcement 11/26/2012](#)

Help us build a better support environment for Business Catalyst
[Blog Post 10/29/2012](#)

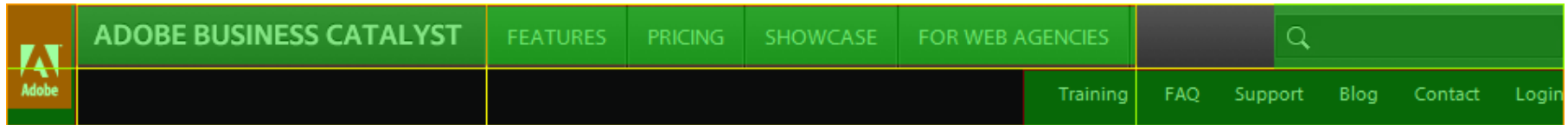
Major CMS Upgrade and Service Maintenance on February 8
[Online Announcement 2/1/2012](#)

Tune in for Episode 15 of the BC podcast!
[Podcast Player 10/24/2012](#)

25

Adobe

Scenario – BC.com Header Using Grid Layout



```
#adobe_header {  
    display: grid;  
    grid-columns: 40px 250px 400px 280px ;  
    grid-rows: 37px 37px;  
}
```

```
#adobe_logo { grid-column: 1; grid-row: 1; grid-row-span: 2; }  
#bc_logo { grid-column: 2; grid-row: 1; }  
#top_menu { grid-column: 3; grid-row: 1; }  
#search_box { grid-column: 4; grid-row: 1; grid-column-align: end; }  
#user_menu { grid-column: 4; grid-row: 2; grid-column-align: end; }
```

Survey: What layout did you liked the most?

Layout	Ease of Use	Power	Vendor Support	Score
Template	5	3	0	?
Flexible Box	3	4	3 ^(*)	?
Multi-column	5	2	3	?
Grid	4	4	1	?

(*) Current implementation is behind the spec.



Adobe