4 Layers of Separation
By Particletree Inc.

For More Information Visit:
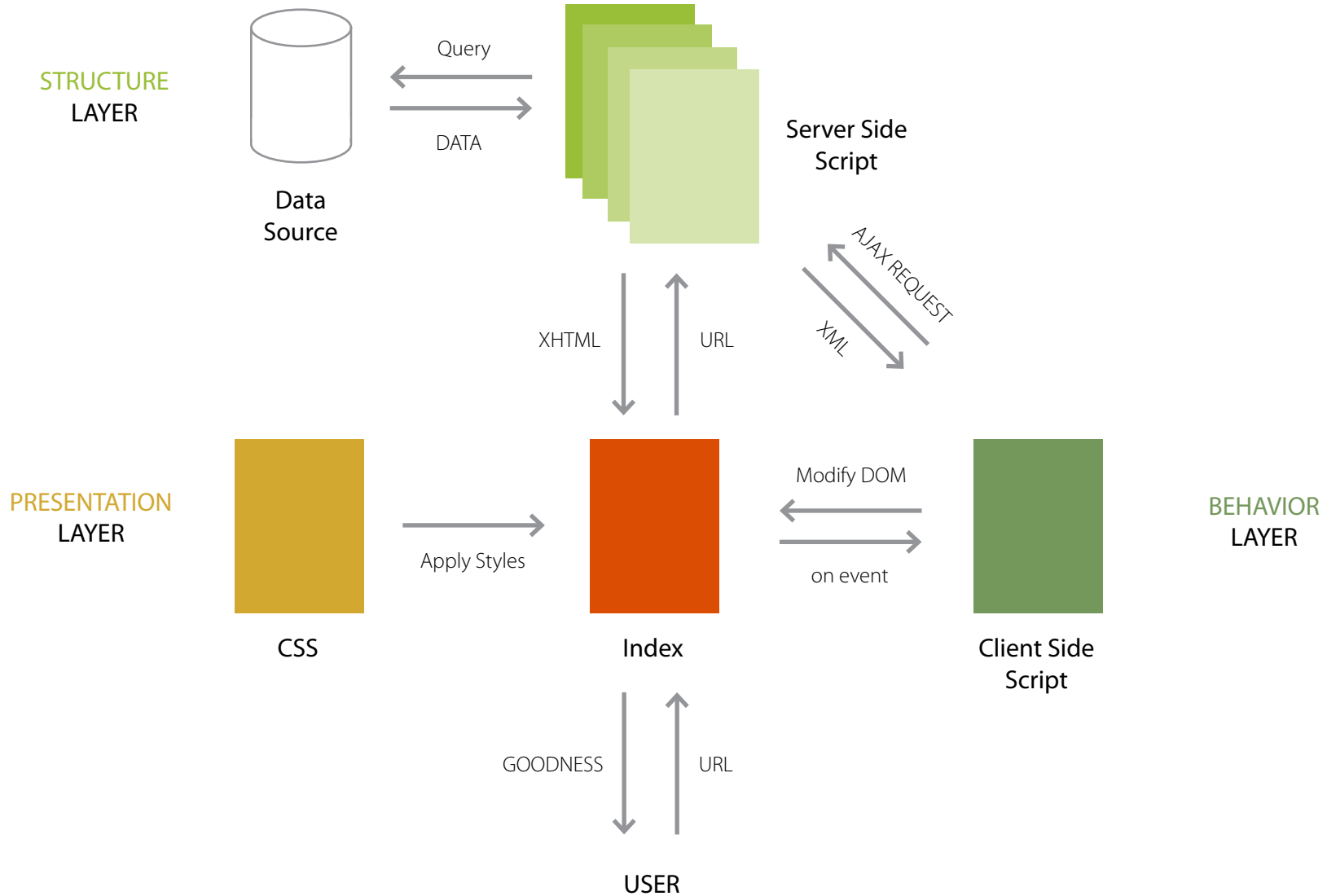
http://particletree.com/features/4-layers-of-separation/

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Typical Way of Doing Things

STRUCTURE
LAYER

Data
Source

Query

Data

Server Side
Script

XHTML

URL

PRESENTATION
LAYER

CSS

Apply Styles

Index

GOODNESS

URL

USER
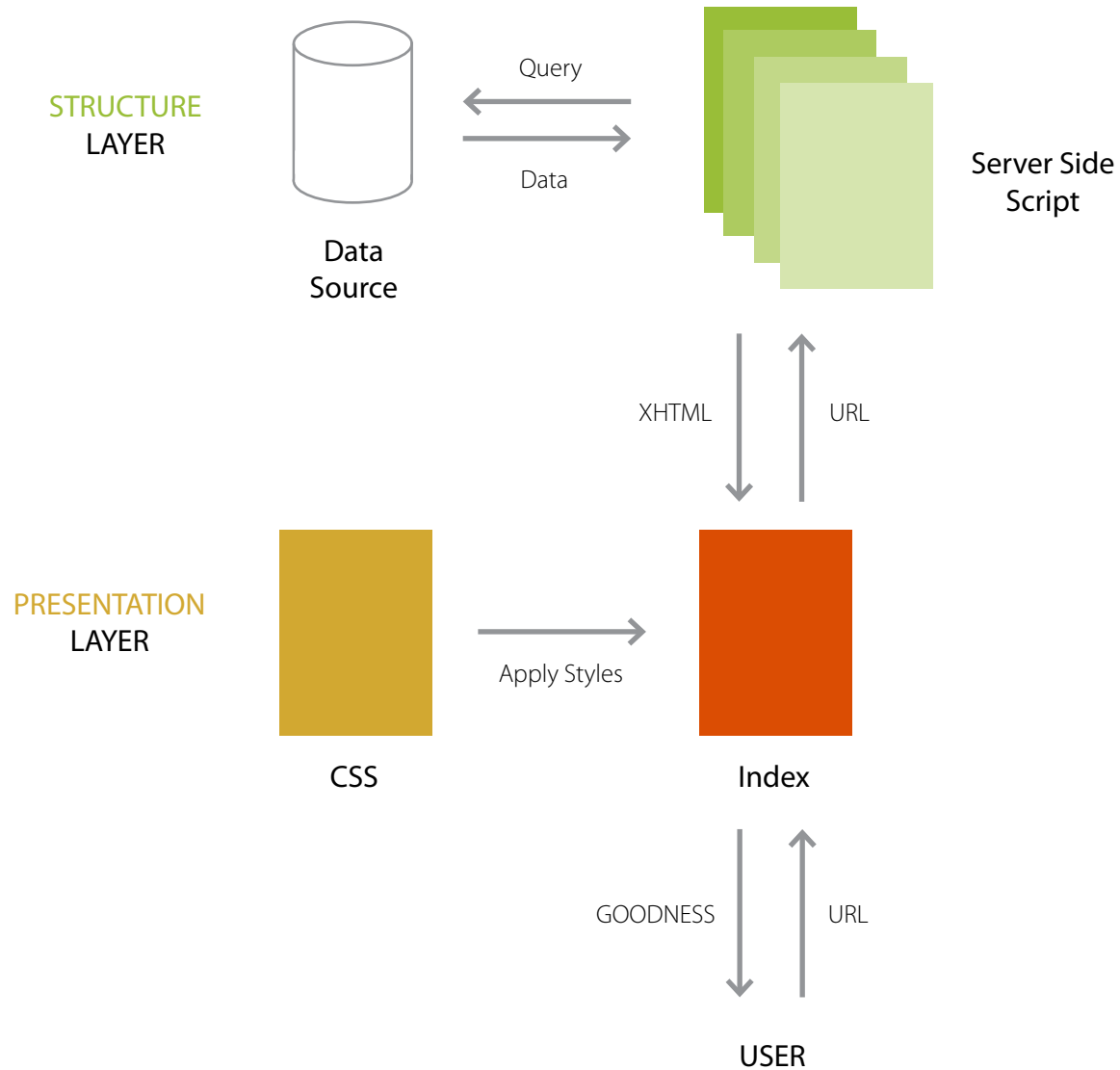
3 Layers of Separation
Introducing AJAX

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Data Source

Query

DATA

Server Side Script

AJAX REQUEST

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XHTML

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LAYER

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GOODNESS

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Presentation Layer

PRESENTATION LAYER

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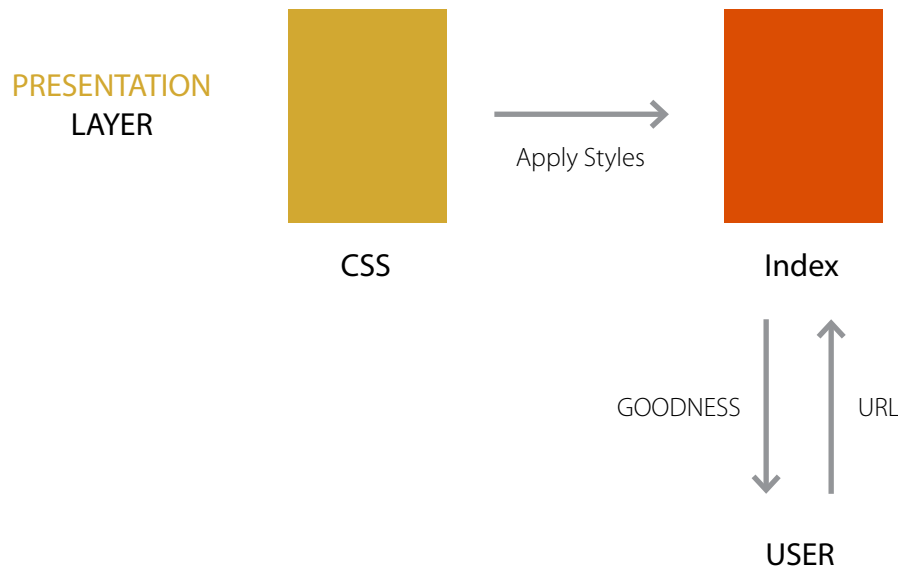
The Presentation Layer is responsible for styling the way your elements look. Primarily focused on the aesthetics of your application, it is important to work closely with the Struture Layer for compatibility. This layer, however, does not involve manipulating markup. If you're messing with XHTML, you're messing with structure.

The most dominant form of this layer is CSS, but you can also substitute/integrate the visual effects of Flash into this layer as well if the ActionScript is separated out into external files.
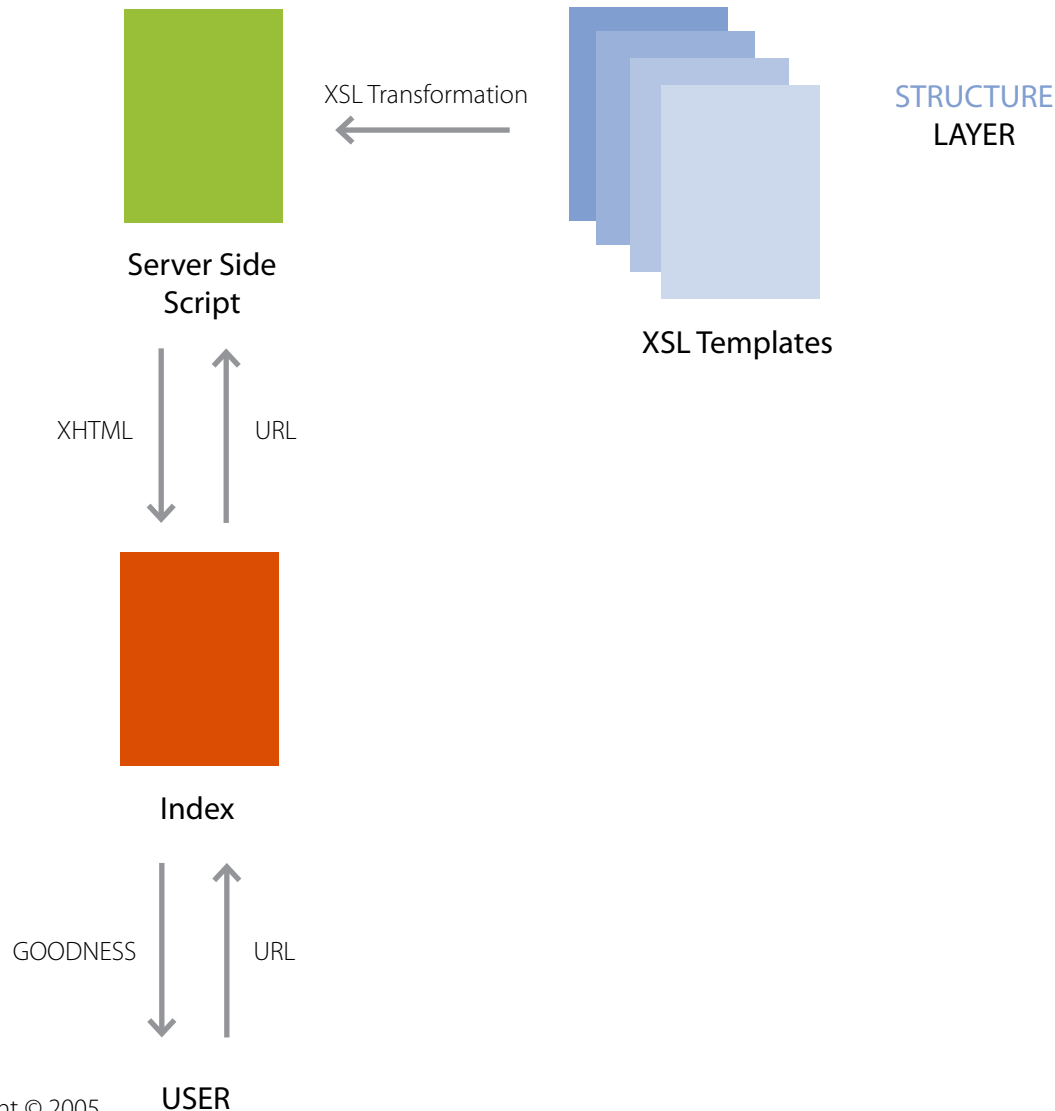
Behavior Layer

AJAX REQUEST

Modify DOM

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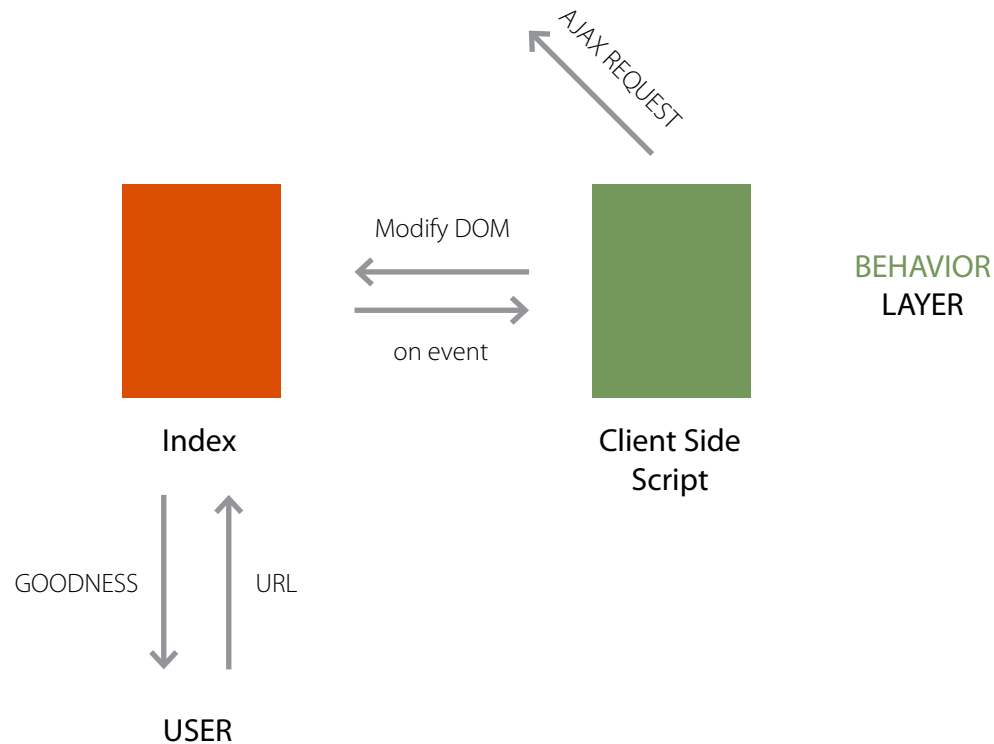
The Behavior Layer is responsible for allowing dynamic interactions and real-time effects. Popularized by the recent Ajax fervor, this layer is receiving a lot more attention by developers. It is important to note that this layer must be integrated unobtrusively to be considered sufficiently separated from the other layers (like structure).

This layer is traditionally created using JavaScript, but feel free to also use ActionScript, JAVA and if you're an IE fan, VBscript.

Structure Layer

Server Side Script

XSL Transformation

STRUCTURE LAYER

XSL Templates

XHTML   URL

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The Structure Layer determines the format your data will be presented to the user. Most of the time this is XHTML, but you can also transform data to look like anything else (PDF, Word Document, vCard, iCal, RSS, TXT and even unformatted XML).

While the structural determination can be accomplished with server-side functions, this layer is best handled by XSL. By using XSLT, developers can cleanly delegate data processing to the Data Layer.

Data Layer

DATA
LAYER

Data
Source

Query

DATA

Server Side
Script

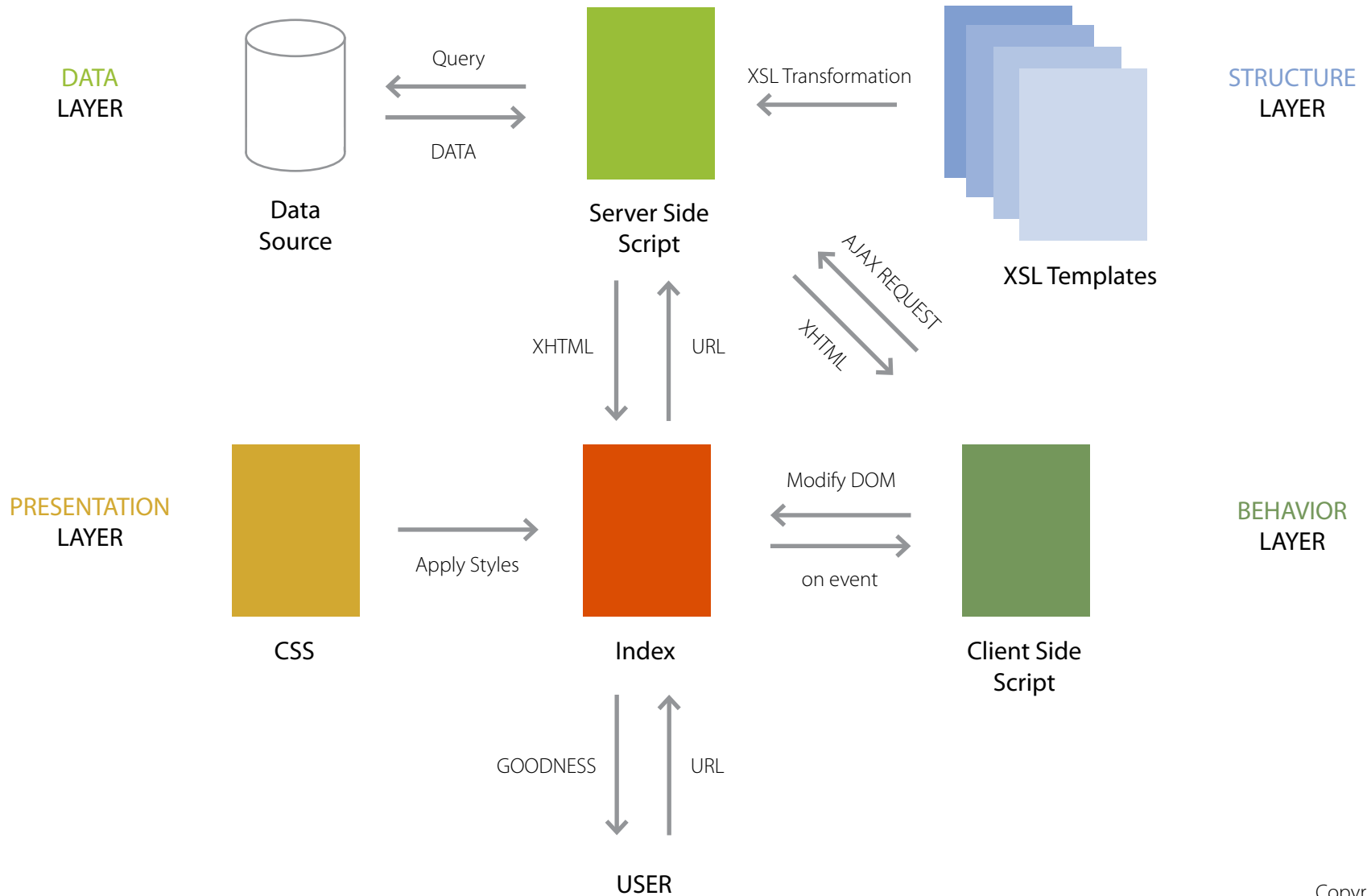XHTML   URL

Index

GOODNESS   URL
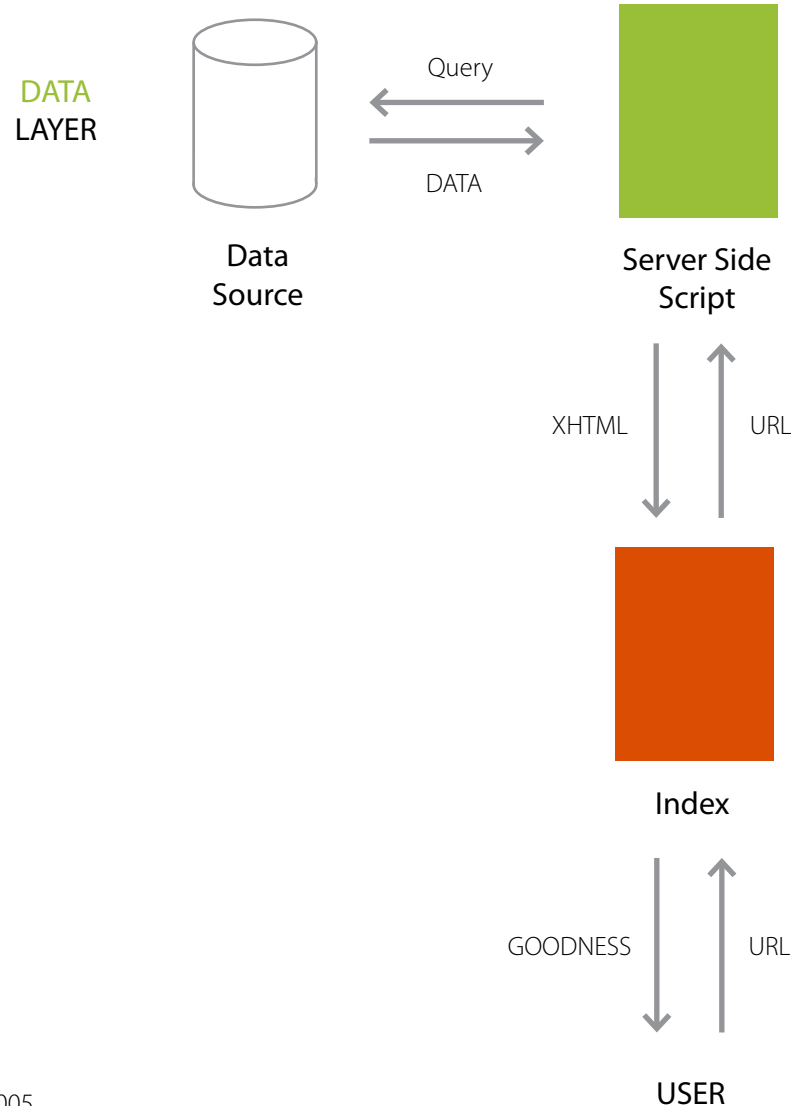
USER

The Data Layer handles data coming from the user or from an outside data source. This layer is responsible for validating data, processing data and formatting data into a transportable format like XML (so it can be turned into markup based on templates provided by the Structure Layer).

Any server-side solution can be used to process this data (PHP, .NET, Python, Ruby, Perl, etc). And while the Data Source is usually a database (mySQL, SQL server, Oracle), it can also be an XML file, a text file, an RSS feed or even a Web 2.0 Service.

4 Layers of Separation
Particletree Degradable Ajax Setup

DATA LAYER

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Query

DATA

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XSL Transformation

STRUCTURE LAYER

XSL Templates

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XHTML

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BEHAVIOR LAYER

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4 Layers of Separation

Google's AJAXSLT Approach (we think.)

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LAYER

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Google's
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