

A blue sky with a white cloud. The cloud is fluffy and white, positioned in the upper right quadrant of the image. The sky is a solid, vibrant blue.

AN INTRODUCTION TO THE WONDERFUL WORLD OF ODATA

Who Am I?

- Wesley Backelant
 - wesback@microsoft.com
 - [@WesleyBackelant](#)
- Technology Advisor @ Microsoft Belux
- Used to know what I was talking about (read consultant)
- Haven't written any books yet

Agenda

- Why OData?
- What is OData?
- How do I create an OData feed?
- How do I distribute data through the cloud?
- Demo time

Data is Valuable

... but even more so when shared

Transparency

Participation

Collaboration

school
transport
air quality
market data
financial data
entertainment
departemental
event information
reference data
social data
erp data
technical feeds

Data is Valuable

... shared, in the proper way:

Accessible & Open

Low Cost

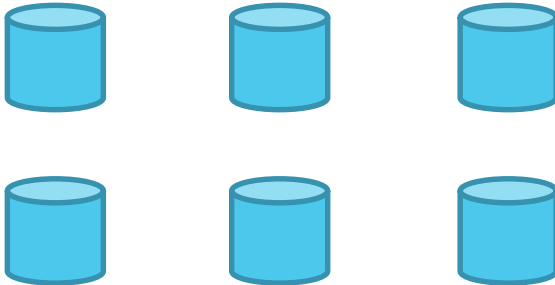
Machine Readable

What about your work environment?

How easy is it for you to access data in your environment?

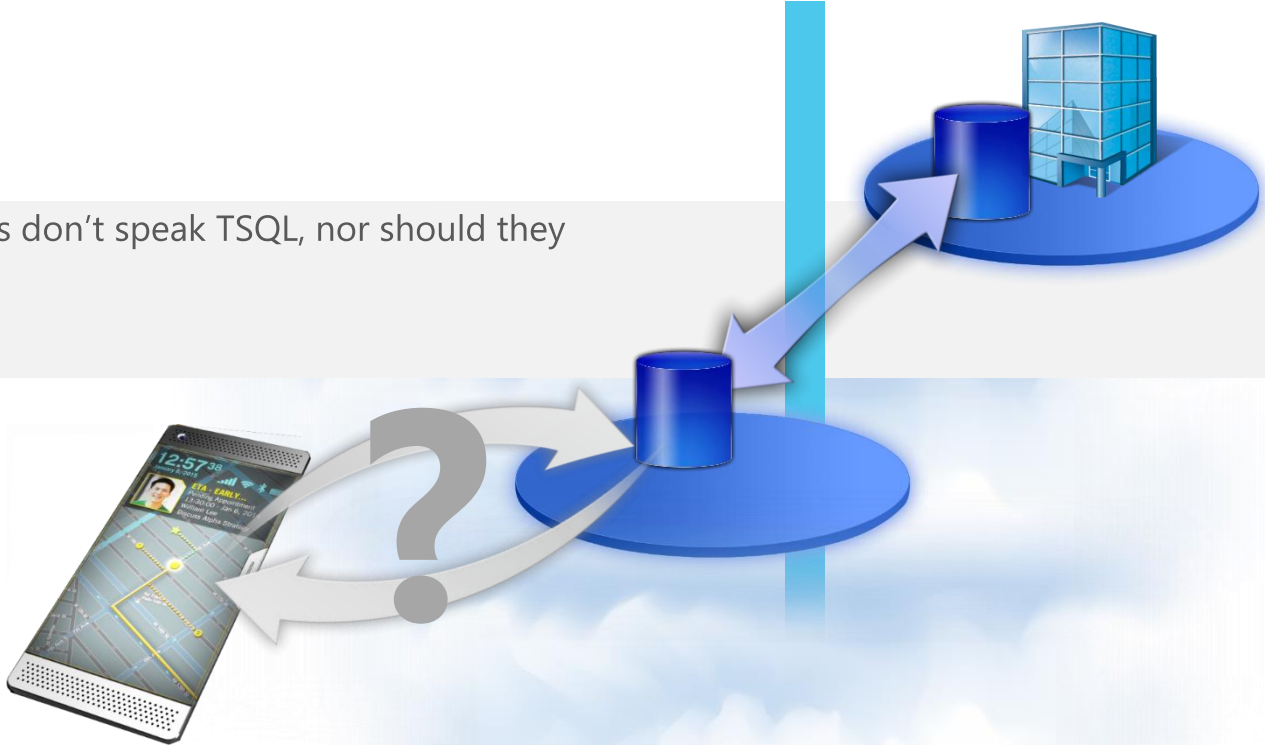
Self-Service BI?

- Different sources
- Different technologies
- No single point to get to information



What about mobile?

Devices don't speak TSQL, nor should they



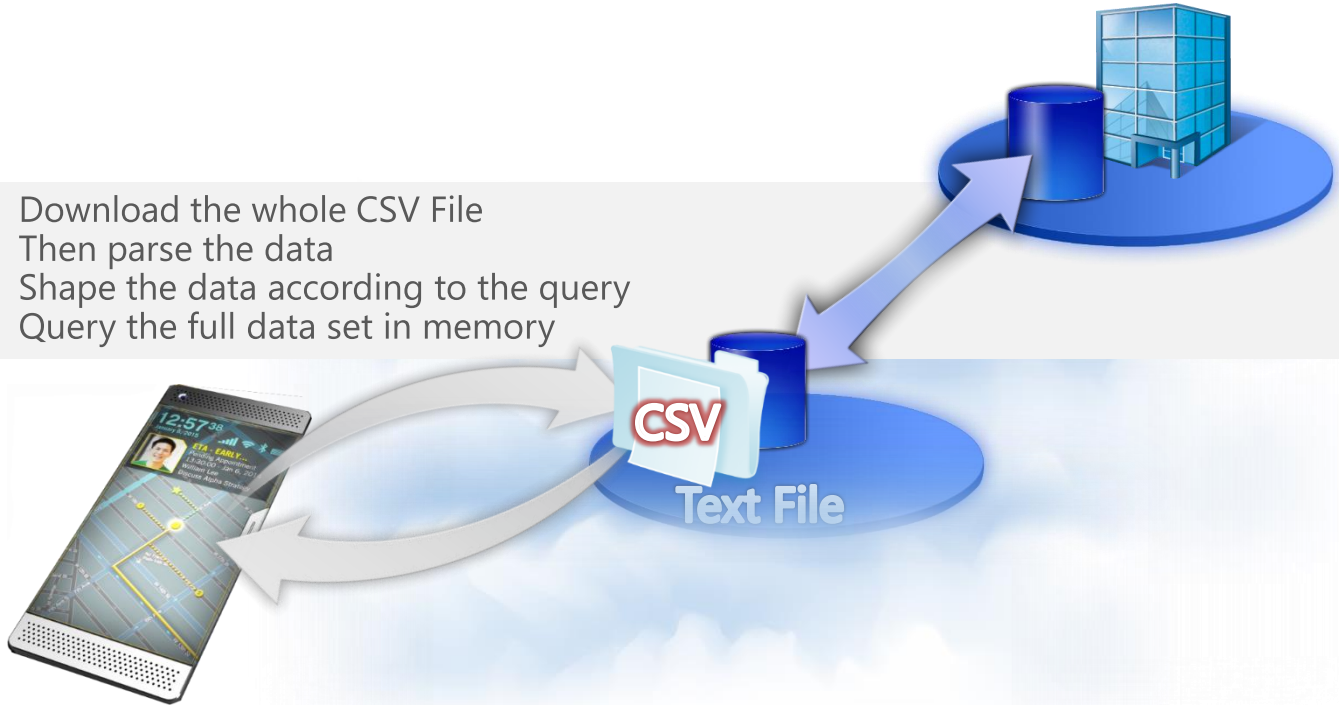
the web services approach

- Do your BI tools talk SOAP?
- Does your device talk SOAP?
- What does your service contract look like?



the flat file approach

- Download the whole CSV File
- Then parse the data
- Shape the data according to the query
- Query the full data set in memory



introducing OData



OData

- Just query for what is needed
- Get mobile-friendly data back (XML or JSON)
- Retain full governance over security and data aspects
- Always up to date ('live query')



```
<entry>  
<entry>  
<entry>
```

```
cloudapp.net/ConsumerPrices.svc/ConsumerPrices(561)</id>
```

```
<updated>2008-03-26T11:47:42Z</updated>
```

```
<author>  
</author>
```

```
<author>
```

```
<link rel="edit" title="ConsumerPrice" href="ConsumerPrices(561)" />
```

```
<link rel="http://schemas.microsoft.com/ado/2007/08/dataservices/related/Category" type="application/atom+xml;type=entry" title="Category" href="http://schemas.microsoft.com/ado/2007/08/dataservices/related/Category(2)" />
```

```
<category term="ConsumerPricesModel.ConsumerPrice" scheme="http://schemas.microsoft.com/ado/2007/08/dataservices/scheme" />
```

```
<content type="application/xml">
```

```
<m:properties>
```

```
<d:RowSeq m:type="Edm.Int32">561</d:RowSeq>
```

```
<d:ItemNumber>01.1.1.2.01</d:ItemNumber>
```

```
<d:ItemName>Flour</d:ItemName>
```

```
<d:Date m:type="Edm.DateTime">2008-06-01T00:00:00</d:Date>
```

```
<d:Price m:type="Edm.Double">159.62</d:Price>
```

```
<d:CategoryID m:type="Edm.Int32">2</d:CategoryID>
```

```
</m:properties>
```

```
</content>
```

```
</entry>
```

introducing OData

OData Protocol

- Data Model
- Addressing
- Metadata

AtomPub (XML & JSON)

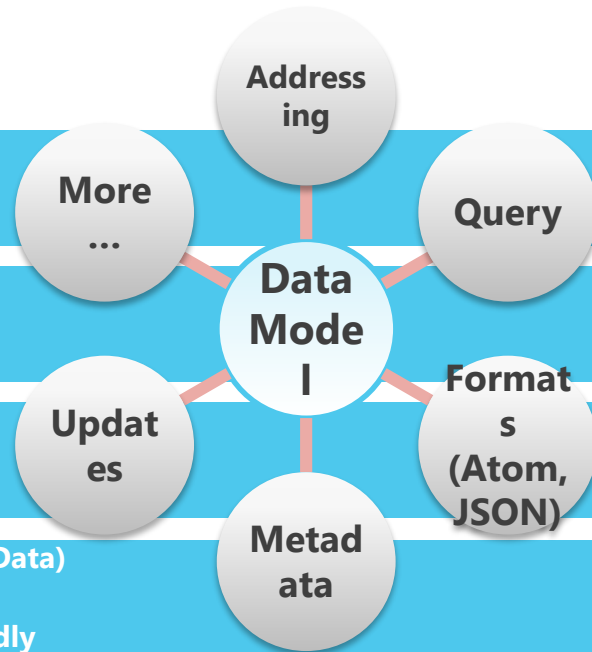
Atom

REST-based

- HTTP (Addressable Data)
- Multi Platform
- Mobile Device Friendly

Data Source

- Databases
- File Systems
- ...

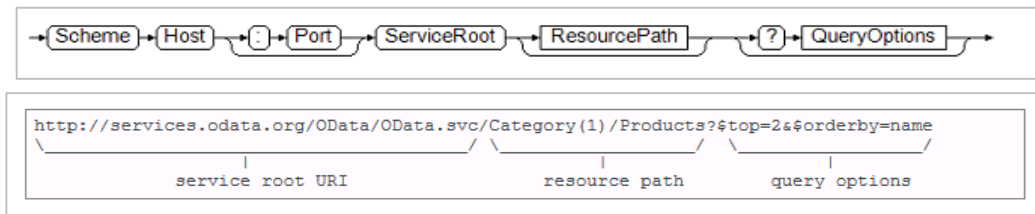


Understanding how OData works

- OData API maps CRUD operations to HTTP verbs
 - Read operations mapped to HTTP **GET**
 - Insert operations mapped to HTTP **POST**
 - Update operations mapped to HTTP **PUT** or **PATCH**
 - Delete operations mapped to HTTP **DELETE**
- Methods fall into one of two categories
 - Navigator operations (e.g., lists.getByTitle) via GET
 - Modifications via POST, PUT, PATCH or DELETE

OData URIs

- URI has three significant parts
 - Service root URI
 - Resource path
 - Query string options



OData Query Option Parameters

- **\$select**

- [http://services.odata.org/OData/OData.svc/Products?\\$select=Price,Name](http://services.odata.org/OData/OData.svc/Products?$select=Price,Name)

- **\$filter**

- [http://services.odata.org/OData/OData.svc/Products?\\$filter=startswith\(CompanyName, 'Alfr'\)](http://services.odata.org/OData/OData.svc/Products?$filter=startswith(CompanyName, 'Alfr'))

- **\$orderby**

- [http://services.odata.org/OData/OData.svc/Products?\\$orderby=Rating](http://services.odata.org/OData/OData.svc/Products?$orderby=Rating)

- **\$top**

- [http://services.odata.org/OData/OData.svc/Products?\\$top=5](http://services.odata.org/OData/OData.svc/Products?$top=5)

- **\$skip**

- [http://services.odata.org/OData/OData.svc/Products?\\$skip=5](http://services.odata.org/OData/OData.svc/Products?$skip=5)
- [http://services.odata.org/OData/OData.svc/Products?\\$skip=5&\\$top=5](http://services.odata.org/OData/OData.svc/Products?$skip=5&$top=5)

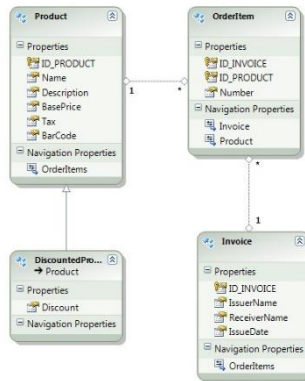
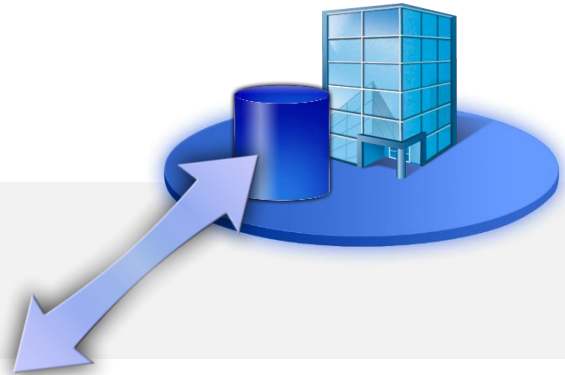
- **\$expand**

- [http://services.odata.org/OData/OData.svc/Categories?\\$expand=Products](http://services.odata.org/OData/OData.svc/Categories?$expand=Products)

HOW DO I CREATE AN ODATA SERVICE?

A starting point

- Create an Entity Framework
- Easy way to deliver your data as an OData Feed
- Based on .NET
- Not the only way to create OData!

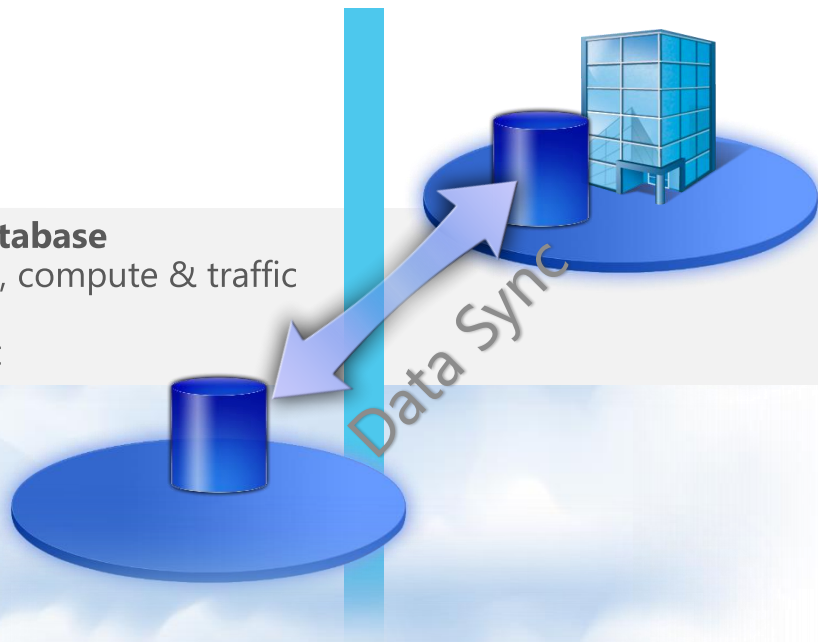


EF Development Patterns

- Database First
 - Reverse engineer model from existing database
- Model First
 - Build model in designer then generate database
- Code First
 - Build model in code then generate database
 - Map to an existing database using code

Using the cloud

- Publish data into **Azure SQL Database**
- OpEx: pay by amount of storage, compute & traffic
- Triple redundancy built-in
- No physical server management



THE HARD PATH TO CONTENT

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* Company Name * Title * Industry
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City State Country
Zip Code
Question/Comment

To request Spatial Data, please provide additional
Spatial Data on CD.

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- Call 1-800-MELISSA
- Chat Unavailable.
- Get More Info

Next Steps

Buy Fone*Data

- Single Update \$150.00
- 1 Year Subscription \$395.00

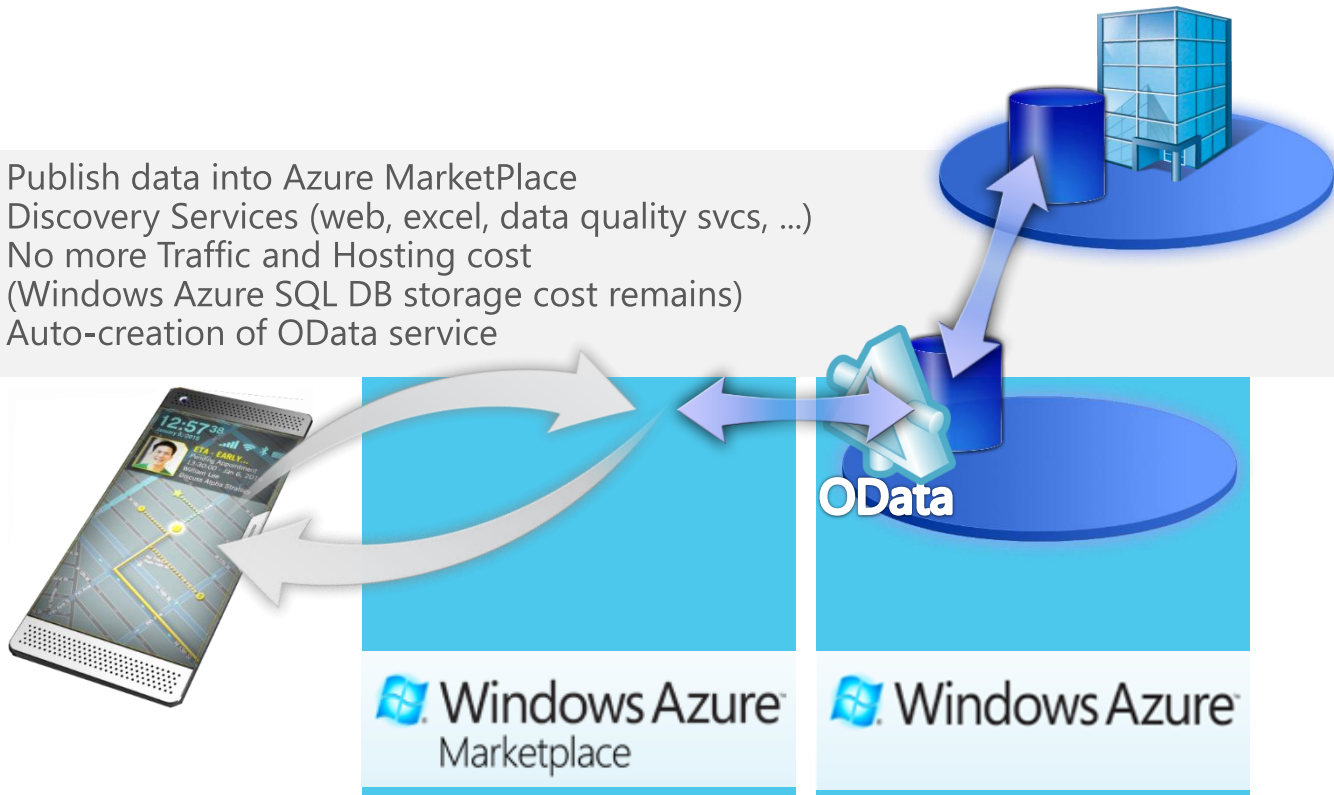
Email

Request Info

Send

Publish through MarketPlace

- Publish data into Azure MarketPlace
- Discovery Services (web, excel, data quality svcs, ...)
- No more Traffic and Hosting cost (Windows Azure SQL DB storage cost remains)
- Auto-creation of OData service

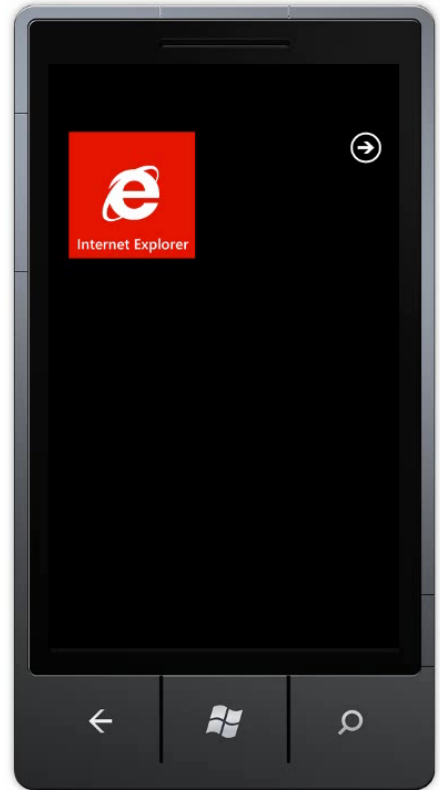


THE ROLE OF THE MARKETPLACE



DEMO

MOBILE EXPERIENCES



JOIN THE MICROSOFT TEAM AT THE FOLLOWING INFORMAL EVENTS

Saturday 4th of May, 2013.

Quiz and Fun Trivia - Saturday 4th of May, 2013. Time 13:10-13:40 @ Microsoft Stand

SQL Core Fun Trivia – Level: 300

Learn with a bit of fun with multiple choice questions on SQL Server.

by Bob Ward

Always ON Overview & Field Experience - Saturday 4th of May, 2013. Level: 300, Venue: Exhibition B, Time: 14:40 -15:40

Cover what Availability Groups bring to the table, the advances in Database Mirroring, Scale out solutions and topology, and how you can cluster across different subnets using Always-On.

by Sameer Parvev, Premier Field Engineer

Accelerate DW Performance with CSI - Lightning Talks - Saturday 4th of May 2013, Venue: Suite 4, Time: 14:40 -15:40

Look at how ColumnStore indexes speed up queries and see it in action with the help of a small demo.

by Farhin Khan, Premier Field Engineer

COMING UP...

Speaker	Title	Room
Alex Whittles	Data Modeling for Analysis Services Cubes	Theatre
Allen White	Maintain SQL Server System and Performance with PowerShell	Exhibition B
Hugo Kornelis	Everything you always wanted to know about MERGE	Suite 3
Stephan Stoltze	Excel 2013 - Whats new beside PowerPivot and Power View?	Suite 1
Christian Bolton	Advanced SQL Server 2012 HA and DR Architectures	Suite 2
Niko Neugebauer	Dynamic MSBI content generation	Suite 4



THANK YOU

RESOURCES

OData	http://www.odata.org
Excel Services Odata	http://msdn.microsoft.com/en-us/library/jj163874.aspx
EF Developer Center	http://msdn.com/data/ef
ADO.NET Team Blog	http://blogs.msdn.com/adonet
EF Design Blog	http://blogs.msdn.com/efdesign
OData SSIS Components	http://www.rssbus.com/ssis/odata/
OData Source SSIS	http://www.cozyroc.com/script/odata-source