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Consumption Based Architecture

*Pragmatic
Works*

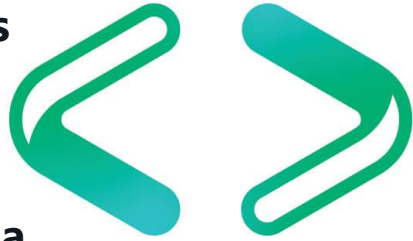
 Azure
Data Week



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- We need Sponsors for Nov/Dec 2018 and 2019!
- Special thanks to our annual sponsor: software**ONE**[®]

Board Member Elections in November/December:

- Your chance to help out the MN SQL community!





PASS
SUMMIT 2018

Join the brightest data professionals focused on the
Microsoft Data Platform!

November 5th Through November 9th

- Pre-Conference Sessions – Monday/Tuesday
- Conference – Wednesday through Friday



SQLSaturday #796 – After Party



Location: 4th Floor of Mall of America

Time: 6:30PM – 10PM

There will be drinks and appetizers as well as free game cards and bowling!

Hang out with some new friends you've made.



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One more architecture?

Enterprise Data Warehouse

Dimensional Modeling

And so on...

What's different?

Core Concepts

Data that cannot be **consumed**, cannot be used to **improve** your business

The advent of powerful **discovery** tools makes consumption of various types of data simpler

The role of IT in visualization is **diminishing**

Users are more technologically savvy

Consumption Based Architecture

Visualization Tools – The Ultimate Consumer

Analytic Tools

Discovery Tools

Data Intelligence

Consumable Data

Source Data:
Direct, mirror,
replica

Loaded Data:
Extracts, ODS

Transformed Data:
Star Schemas, Data
Marts, EDW

Master or
Dimension Data

Server
Level

Load
File /
Extracts

ETL

Data in the Enterprise: Source Systems

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Data in the Enterprise: Source Systems

Consumable Data – The Heart of the Architecture

Not necessarily a physical location

All consumable data is part of this

Source data – copies, replication

Loaded data – moved data, not exact replica of source, also includes file based sources such as mainframe reports

Transformed data – data is fundamentally transformed such as into a star schema, includes most EDWs and data marts

Master Data – data that can be used to bring all the data together, such as dimensions

Consumable Data Support

SQL Server

Replication

Always On replicas

Master Data Services

SSIS

Hadoop and Files

Azure Storage

Azure Data Lake

HDFS

Profisee

Master Data Management

Azure

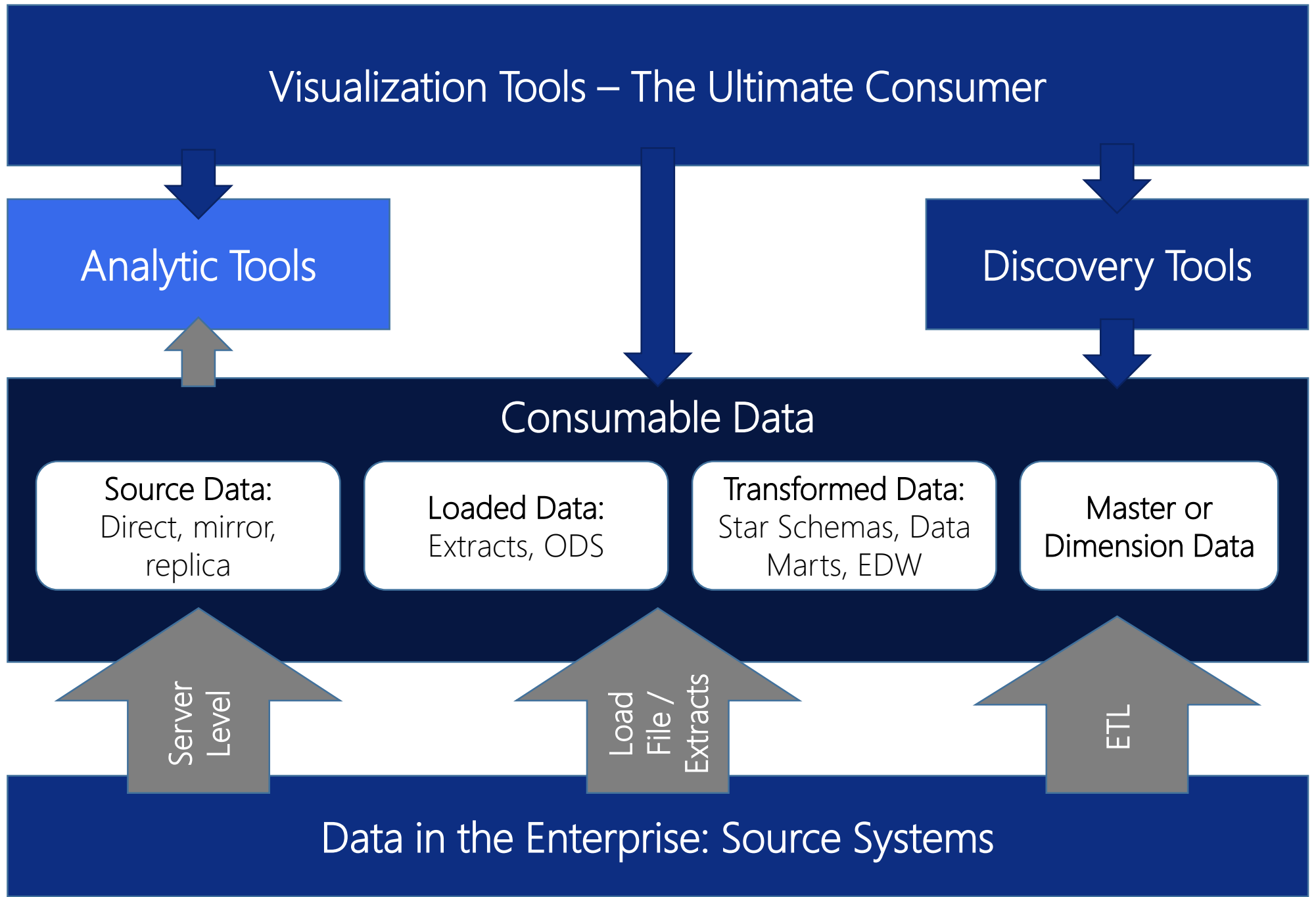
Cosmos DB

Azure SQL DB

Azure SQL DW

Consumption Based Architecture

Data Intelligence



Data Intelligence – The Map

This is the data dictionary used to provide the map into the consumable data

It also includes support on how to map relationships in the consumable data.

Any relevant meta data should be included here

- Lineage

- Business definitions

- Security or access requirements

Data Intelligence Support

DOCxPRESS – Pragmatic Works

Azure Data Catalog

ERWin Data Modeler

ER/Studio by Idera

Informatica Enterprise Data Catalog



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Data in the Enterprise: Source Systems

Discovery Tools – The Mashup

Tools used by non-IT users to explore and discover data in the consumable data

- Sandbox environment

- Prototype environment

Not supported by IT or minimal support

Scenarios supported

- Mashups

- Azure Machine Learning

- R/Python

Discovery Tools

R

Python

Power BI

AzureML

Data Science Notebooks

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Data in the Enterprise: Source Systems

Analytic Tools – The “Cube”

Tools used by IT to provide enterprise supported solutions

Full IT Support

Longer lifecycle

Scenarios supported

- Multidimensional Data Stores

- Data Mining

- SAS

Analytic Tools

SQL Server Analysis Services Models

Tabular Model

Multidimensional Model

SAS

Azure Machine Learning

SQL Server ML Server

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Data in the Enterprise: Source Systems

Visualization

Visualization tools use data from the consumable layer, discovery tools, and analytic tools.

While this can be done by IT, the tools are becoming easier for users to do and they should be encouraged to do so.

IT needs to be enablers – training, prototyping, etc.

Visualization Tools

SQL Server Reporting
Services

Power BI

Excel

Business Objects

OBIEE

Pyramid Analytics

Tableau

Qlikview

Jaspersoft

... and so many more

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Data in the Enterprise: Source Systems

Data Intelligence

Putting it together

Use assets you already have

Increase your consumable data based on need and data readiness

This is NOT a data dump. This is more about getting good data into the hands of the business when the business needs it!

IT focuses on areas such as user access, documentation, and compliance

Data Virtualization

Tools that support data virtualization:

- Cisco Data Virtualization

- Red Hat JBoss Data Virtualization

- Coming soon – SQL Server 2019 with Polybase

Thoughts on these

- Cisco and Red Hat can be set up in Azure with VMs

- Red Hat is part of OpenShift and expect more integration

- Try it before you move forward

- SQL 2019 is coming soon

Other thoughts

Users are finding ways to consume the data anyway.

Embrace **self-service**, do not reject it.

The source system is the source of truth for the user.

The **closer** the data is to the source, the more the user will accept it.

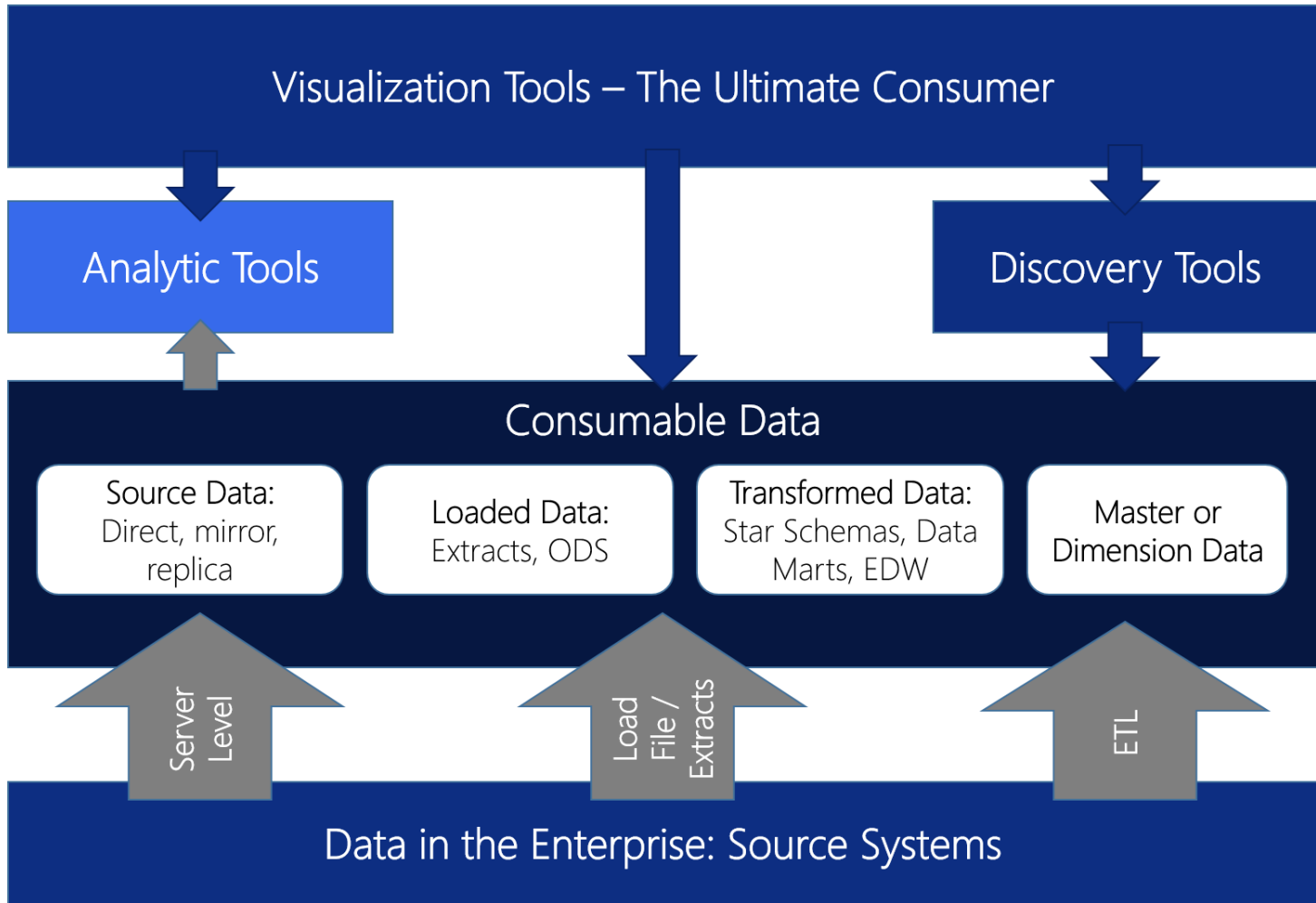
Will you enable your users?

Or do you have a need to control the experience?



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