



DATA INNOVATION AT ENTERPRISE SCALE

Ace Your Archiving Audits & Make Data FAIR

Information Lifecycle Management

100% Regulatory Compliance, Retrieval & Reuse

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25 Years of Customer Needs Spoke:

- Single, Scalable, Uniform Archival Standard Across Your Enterprise
 - *For Structured and Non-Structured Data*
- FDA, EMA & CFDA & CDSCO-Compliant Data Consistency / Integrity
- Need to Substantially Reduce:
 - Archiving Data Costs
 - Managing Legacy Data
 - Integration Complexity
 - Data Management / Stewardship / System Maintenance
- Make Data Findable, Accessible, Interoperable and Ready for Reuse



Leverage Your Investment in Archiving for Data Analytics

Turn obligations into opportunities

➤ CURRENT DATA PRESERVATION METHODS ARE STALE

- Data is NOT Information and Information is NOT Knowledge
- Think Beyond the Silo, as Archiving is Central to the Information Life Cycle!

➤ REAL CHANGE IS CULTURE CHANGE

- Don't "Entomb" Your Data – Embrace It!

➤ IT IS TIME TO RETHINK YOUR APPROACH TO DATA PRESERVATION

- Enabled by your input we have created a data preservation platform for the future!

Great companies start because the founders want to change the world... not make a fast buck. - Guy Kawasaki

Introducing ZONTAL Space: The Future of Data Preservation

**While others still talk about Data as an Asset,
we have the solution to live Data as an Asset**

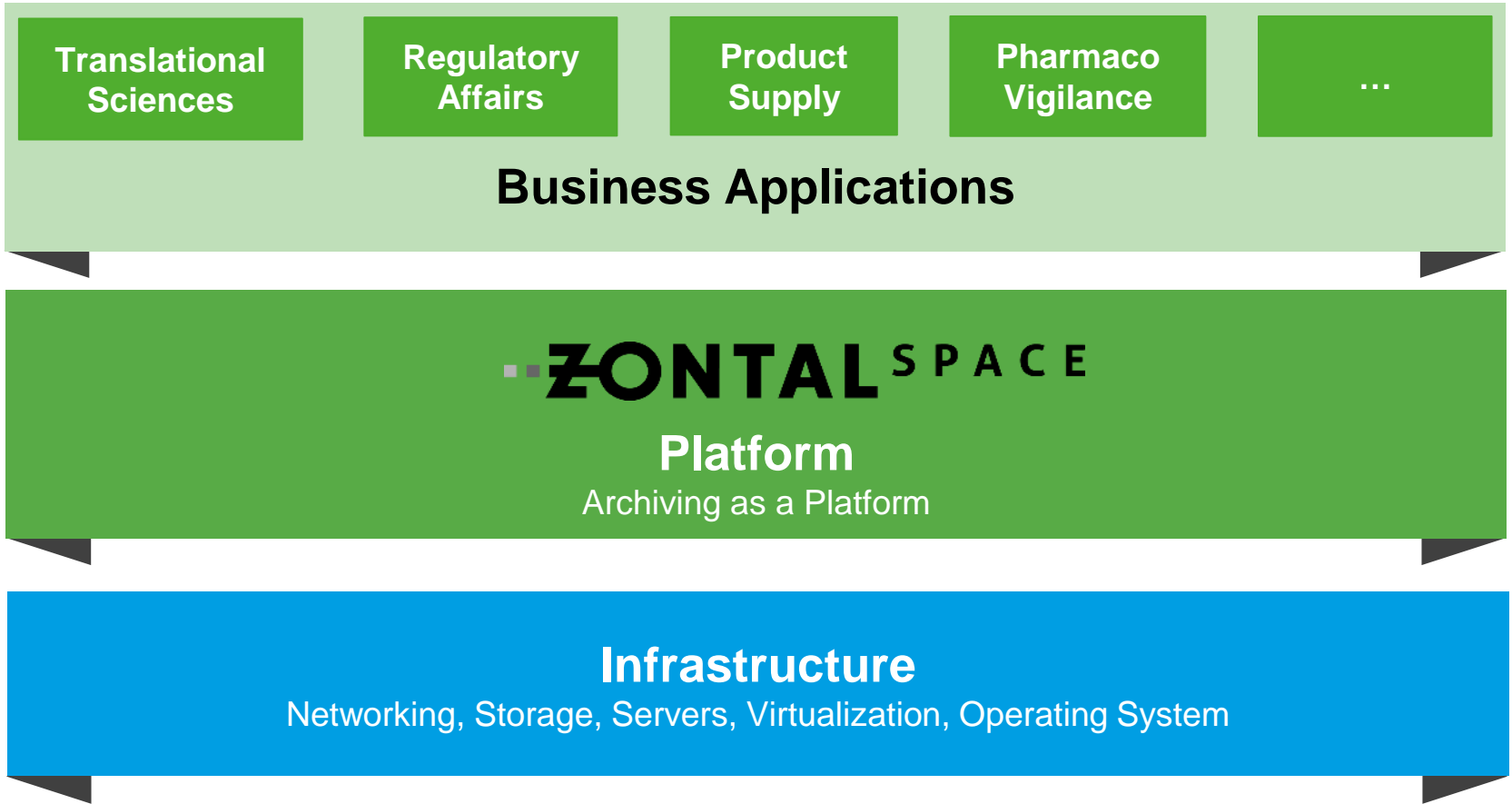


Three Conditions for Data as an Asset:

1. You have a real asset management system!
2. You can actually use your archives & data to capitalize on the value!
3. It is on your balance sheet!

DATA INNOVATION AT ENTERPRISE SCALE

Platform Concept



ZONTAL Space – The Scalable Enterprise Solution

SCALABLE THROUGH
EVERY SOURCE

- ✓ Use the modules that you need to get your data ready for archive

SCALABLE THROUGH
EVERY GEOGRAPHY

- ✓ Platform accessible from anywhere

SCALABLE FOR
EVERY FUTURE USE CASE

- ✓ Connect analytical tools

CDS

ELN

LIMS

etc.

ZONTAL Space
Enterprise Platform

Lab Automation

Visual Analytics

Machine Learning / AI

Connecting Data in Archives to Data Analytics

Capture

Manage Information Lifecycle

Reuse

Reference & Master Data Management

Capture

The screenshot shows a data management interface with a table of archived experiments and a detailed view of a selected experiment.

Lifecycle Status	Created On	Experiment ID	External Batch ID
Archived	2019/03/28 12:25:...	423472	1010008357, 1010...
Archived	2019/03/29 05:27:...	423472	1010008357, 1010...
Archived	2019/03/28 11:36:...	423472	1010008357, 1010...
Archived	2019/03/29 05:19:...	423472	1010008357, 1010...
Archived	2019/03/28 12:45:...	423472	1010008357, 1010...
Archived	2019/03/22 10:57:...	423472	1010008357
Archived	2019/03/28 13:17:...	423472	1010008357, 1010...
Archived	2019/03/29 05:19:...	423483	1010008413, 1010...
Archived	2019/03/29 05:27:...	423483	1010008413, 1010...
Archived	2019/03/28 13:18:...	423484	1010008482, 1010...
Archived	2019/03/29 05:20:...	423484	1010008482, 1010...
Archived	2019/03/29 05:28:...	423484	1010008482, 1010...
Archived	2019/03/29 05:28:...	423484	1010008482, 1010...
Archived	2019/03/29 05:28:...	425220	1010008528, 1010...
Archived	2019/03/28 13:18:...	425222	1010008589, 1010...
Archived	2019/03/29 05:28:...	425222	1010008589, 1010...

The detailed view shows the following information:

- Experiment:** Step (D10), Purpose (Batch PAC1/02 LSC), Project Name, Experiment ID (423483).
- Sample:** Sample Type (Product), Sample Identifier, External Supplier, External Batch ID (1010008413).
- Product:** Theoretical Moles (45.42), Theoretical Mass (31.32), Percent Yield (40.87), Percent Purity (98.99), Actual Moles (18.38), Actual Mass (12.80), Molecular Weight (555.41), Molecular Formula, Formula Mass (689.50), Equivalents (1.00).

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Connecting Data in Archives to Data Analytics

The screenshot displays the ADF Explorer application interface. On the left, a 'Tree View' pane shows a hierarchical structure of data cubes. The selected cube is 'http://id.novartis.com/lucullus/basel/series/datacube/3773306', which contains a 'Measures' folder with a 'value' measure and a 'Dimensions' folder with a 'time' dimension. The main area shows a 'Measure Graph' for the selected measure. The graph title is 'Measure Graph [C:\dev\novartis\lucullus.adf]'. It displays a line chart with a y-axis ranging from 0.00 to 0.12 and an x-axis with markers at 5.0E+5 and 1.0E+6. The data shows a noisy upward trend that plateaus around 0.09. The graph includes a 'Cross-Hair' checkbox and a 'Default size' button. Below the graph, it indicates 'Points: 20493' and provides navigation icons. The bottom status bar shows 'Version 1.1.5.0, Running 64 bit'.

Connecting Data in Archives to Data Analytics

The screenshot displays the TIBCO Spotfire interface. On the left, a table titled 'SampleResults' lists data for 'PROCESS NA...', 'PARAMETERS', 'CULTIVATION_TIME', and 'RESULT_CONV'. The main area contains a dashboard titled 'RESULT_CONV vs. CULTIVATION_TIME' with 12 line charts. The charts track parameters such as AIR_sat_Flex(%), avg_diameter(um), Ca_Flex(mmol/L), GLC_Flex(g/L), GLN_Flex(g/L), HCO3_Flex(mmol/l), K_Flex(mmol/L), LAC_Flex(g/L), NH4_Flex (mmol/L), pH_phox, pH_T_Flex, pH_T_phox, total_cells_ml (cells/ml), viability (%), and viable_cells (cells/ml). A 'Filters' panel on the right allows for filtering by 'CULTIVATION_TIME' (range 2.02 to 13.85) and 'RESULT_CONV' (range 0.02 to 13575668.58). A list of 'PARAMETERS' is also visible, with several checked. The bottom status bar shows '1 filter changed', '185 of 191 rows', '0 marked', and '4 columns'.

THANK YOU

