

THE CASE FOR AI & MACHINE LEARNING

IN THE SCIENCES

Artificial Intelligence | Machine Learning | Data Science

terms that promise unprecedented opportunities for science – and hype

unlock this potential by implementing solutions based on sound fundamentals

THE IMPACT OF AI

the use of AI offers transformative potential for science in the 21st century



200x

faster prediction
of metallic glass alloys



AI-driven businesses
poised to steal

\$1.2T/year

from their AI-less peers



50%

reduction in compound
screening costs

WHY SO MUCH POTENTIAL?

AI helps organizations tackle some of their largest challenges in product R&D

90%

drugs fail to pass clinical trials

90%

R&D data in CPG is only used once

50%

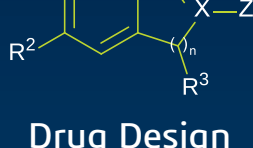
E&M R&D resources are wasted

AI helps answer complex questions inexpensively,
using historical data to guide future decisions.

BUILDING A SCALABLE DATA SCIENCE FRAMEWORK

It's not enough to just built a model

scientific data science problems are unique



Drug Design
& Repurposing



Novel Materials
Design



Formulation
Design



Image
Analytics

recruiting and retaining qualified data scientists remains a challenge

28%

increase in demand
for data scientists
over previous years

Attrition
Demand is high!

50%

Organizations struggle to retain
experienced data scientists

81%

Data Scientist job listings
require minimum
3-5 years experience

WHY IS THE JOB MARKET SO TIGHT?

You need people who know **WHAT** questions to ask
- they need to understand your business

You need people who know **HOW** to ask them
- they need to have good computational skills

**ORGANIZATIONS NEED A SCALABLE DATA SCIENCE
FRAMEWORK TO EMPOWER THEIR CURRENT DATA SCIENTISTS**

help data scientists spend their time on value-added work



time is spent on
data preparation



list data preparation
as their least
favorite activity



say improving
data quality is the
biggest bottleneck

You need to help automate these routine tasks!

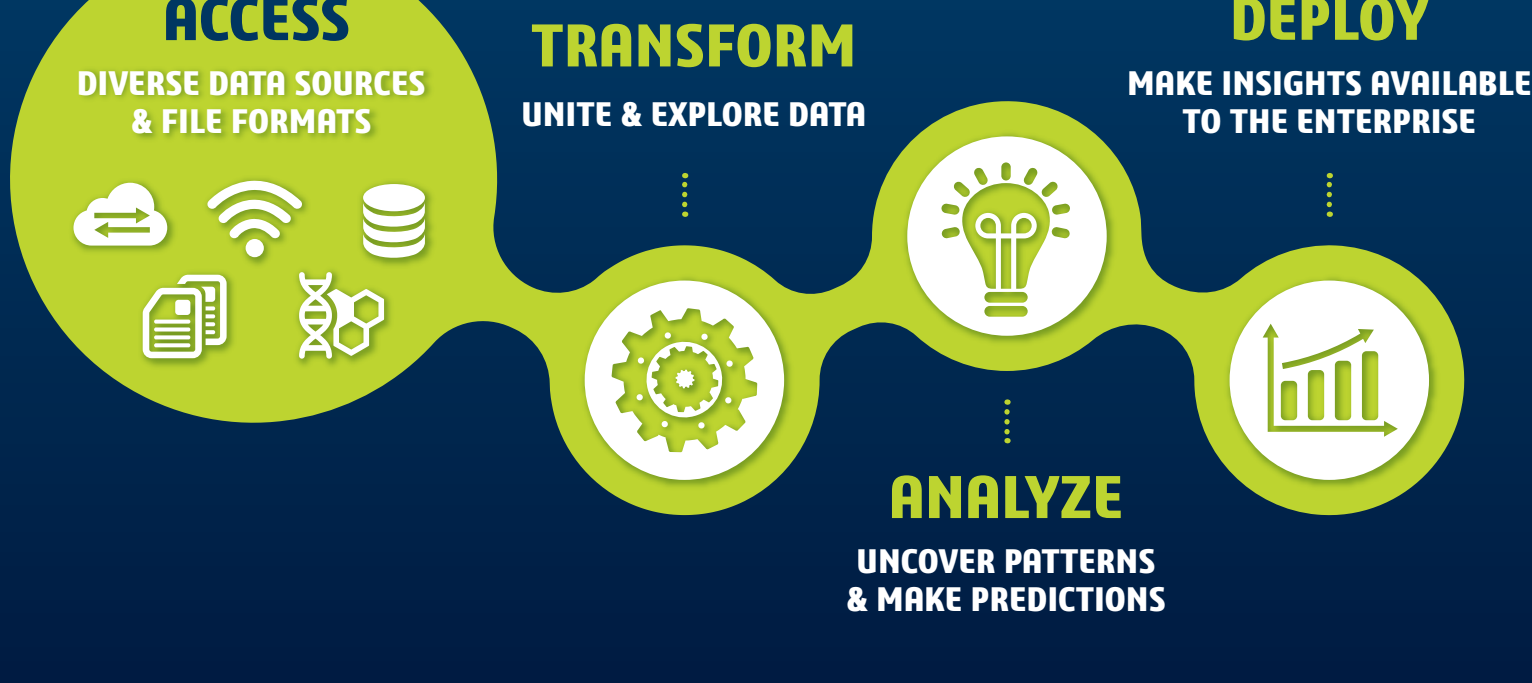
Solutions must be open & flexible

data scientists leverage a variety of tools



BIOVIA PIPELINE PILOT: THE SOLUTION FOR SCIENTIFIC AI AND MACHINE LEARNING

Pipeline Pilot simplifies data science, connecting data aggregation
and cleaning to model building and deployment



Purpose-built for Science

Pipeline Pilot offers discipline-specific functionality out of the box:



Chemistry



Biology



Prebuilt ML
Architectures



Image
Analytics



Doc & Text
Analytics

PIPELINE PILOT'S IMPACT

Up to

17x

ROI

Develop "Code Free"

40% faster
development cycles

Up to

85% reuse

of experimental data

30%

time savings
for end users

users say

68%

Pipeline Pilot
makes computations
faster

82%

Pipeline Pilot
improves their ability
to aggregate data

Start generating **actionable** insight.
Support **enterprise data science** with BIOVIA Pipeline Pilot

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sources

<https://www.forbes.com/sites/gilpress/2016/03/23/data-preparation-most-time-consuming-least-enjoyable-data-science-task-survey-says/#35d0942a6f63>

https://visit.figure-eight.com/rs/416-ZBE-142/images/CrowdFlower_DataScienceReport.pdf

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