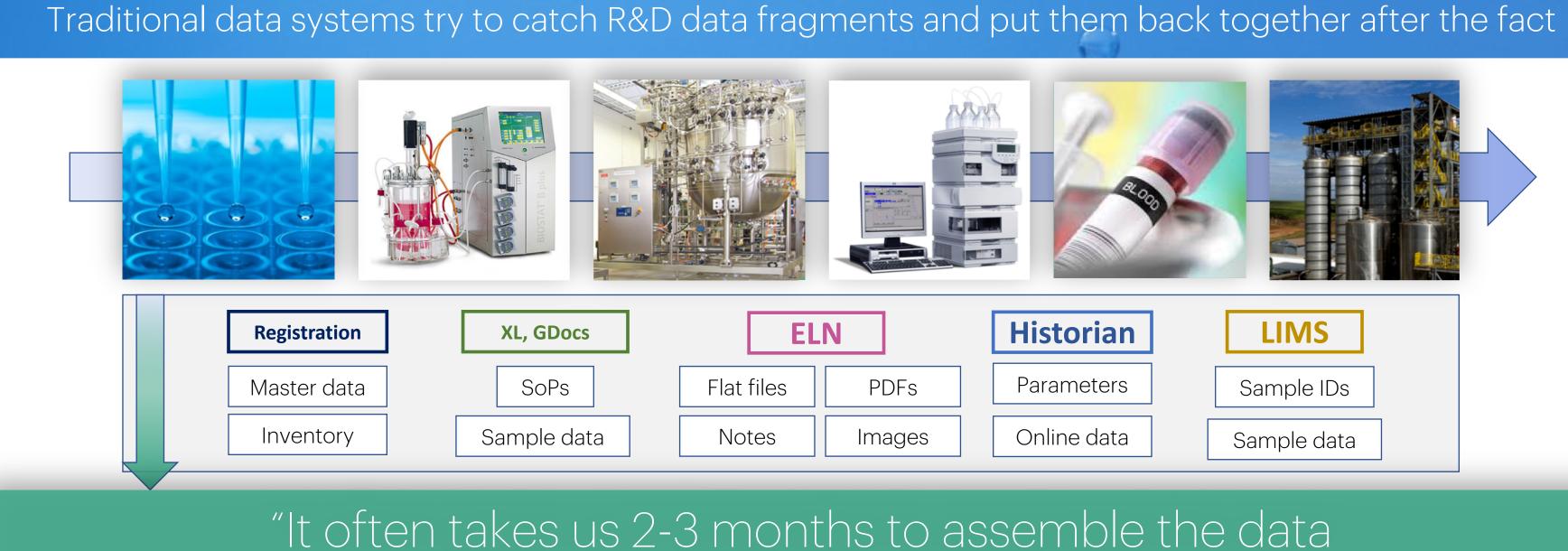
## Lab Data to Machine Learning in 30 seconds Riffyn Case Studies in PK/Tox and Solid Dose Formulations Laura D. Jennings-Antipov<sup>1</sup>, Paul Harradine<sup>2</sup>, Thomas Colace<sup>2</sup>, Jennifer Leyman<sup>2</sup>, Douglas West<sup>2</sup>, Maria Jablonski<sup>2</sup>, Timothy A. Rhodes<sup>2</sup>, David Kniaz<sup>2</sup>, Timothy S. Gardner<sup>1</sup>

### ,<sup>1</sup> Riffyn, Inc.

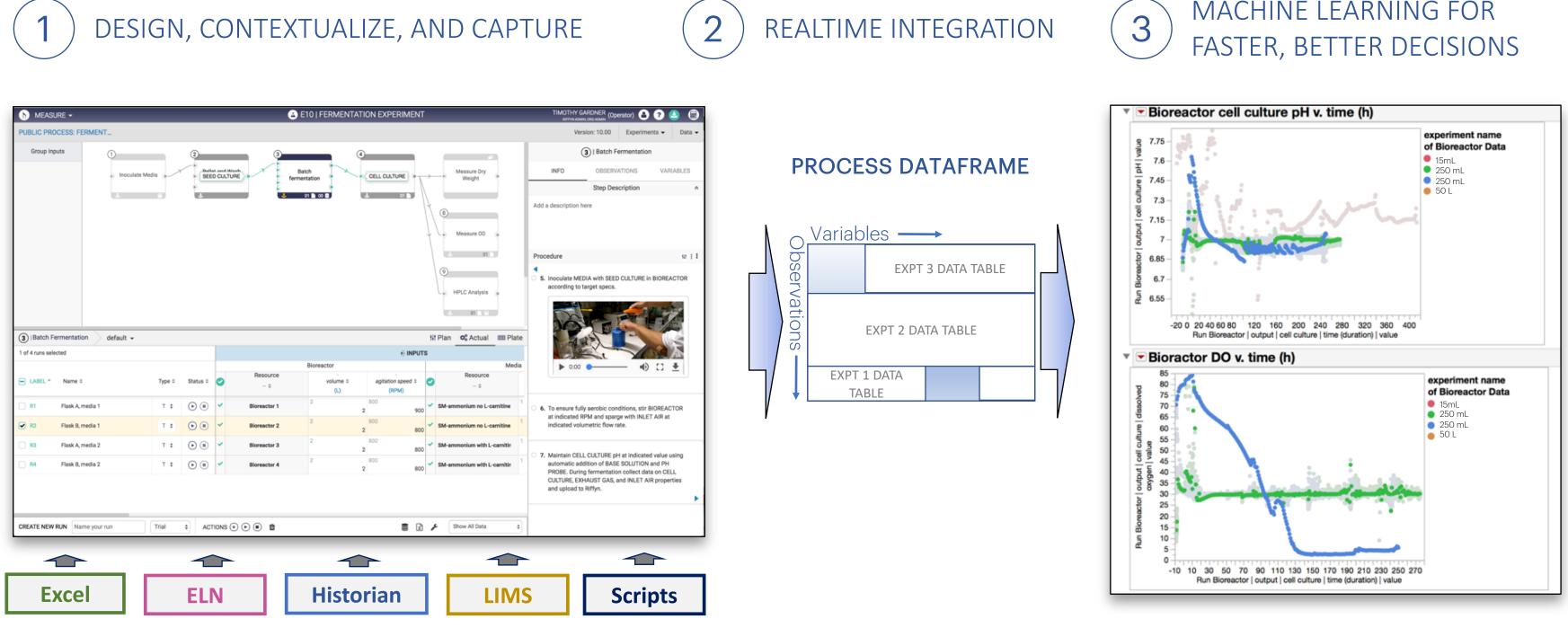
### Problem



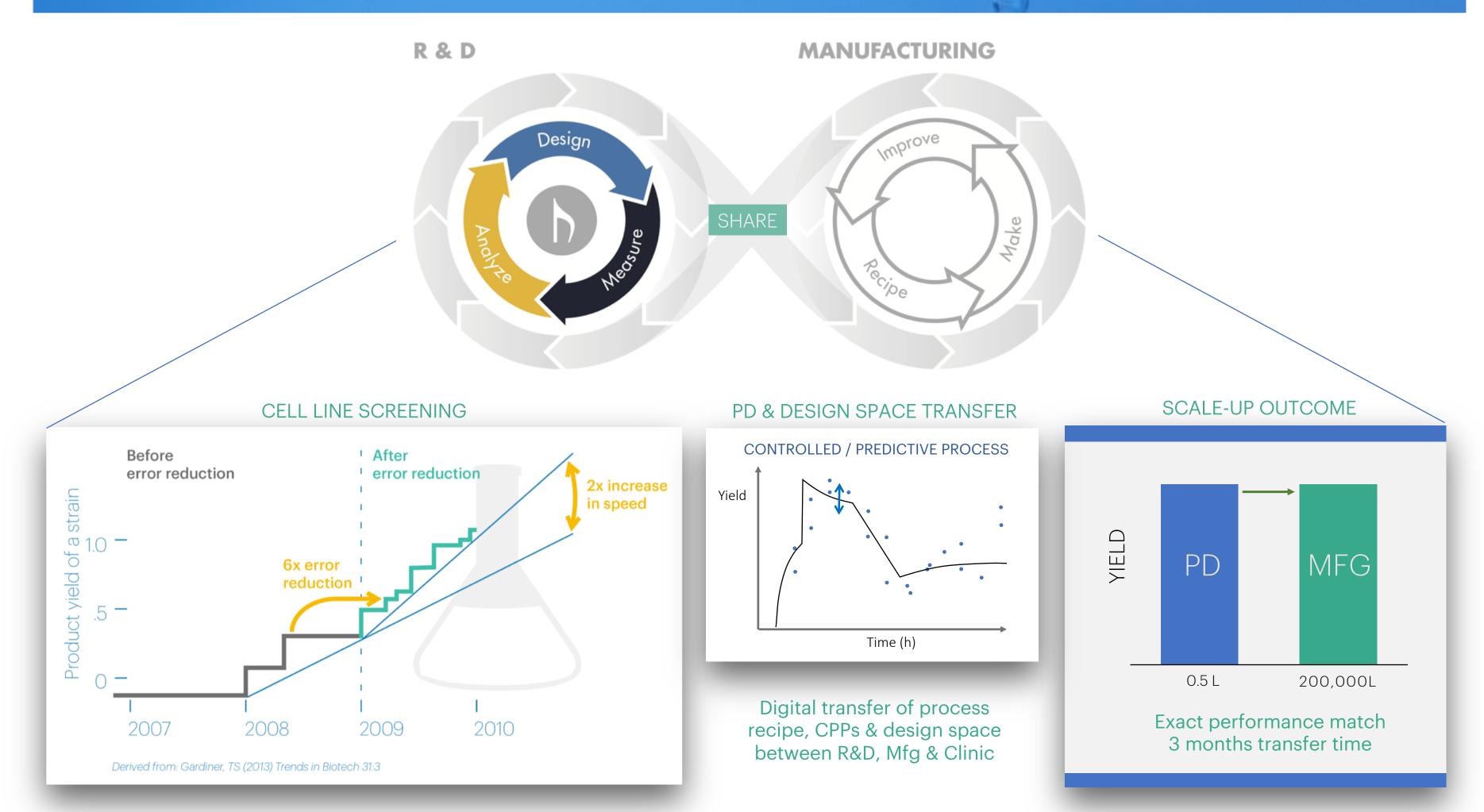
from a single development batch."

### Solution

Riffyn SDE integrates flexible process designs, parameterization & measurement data in real-time



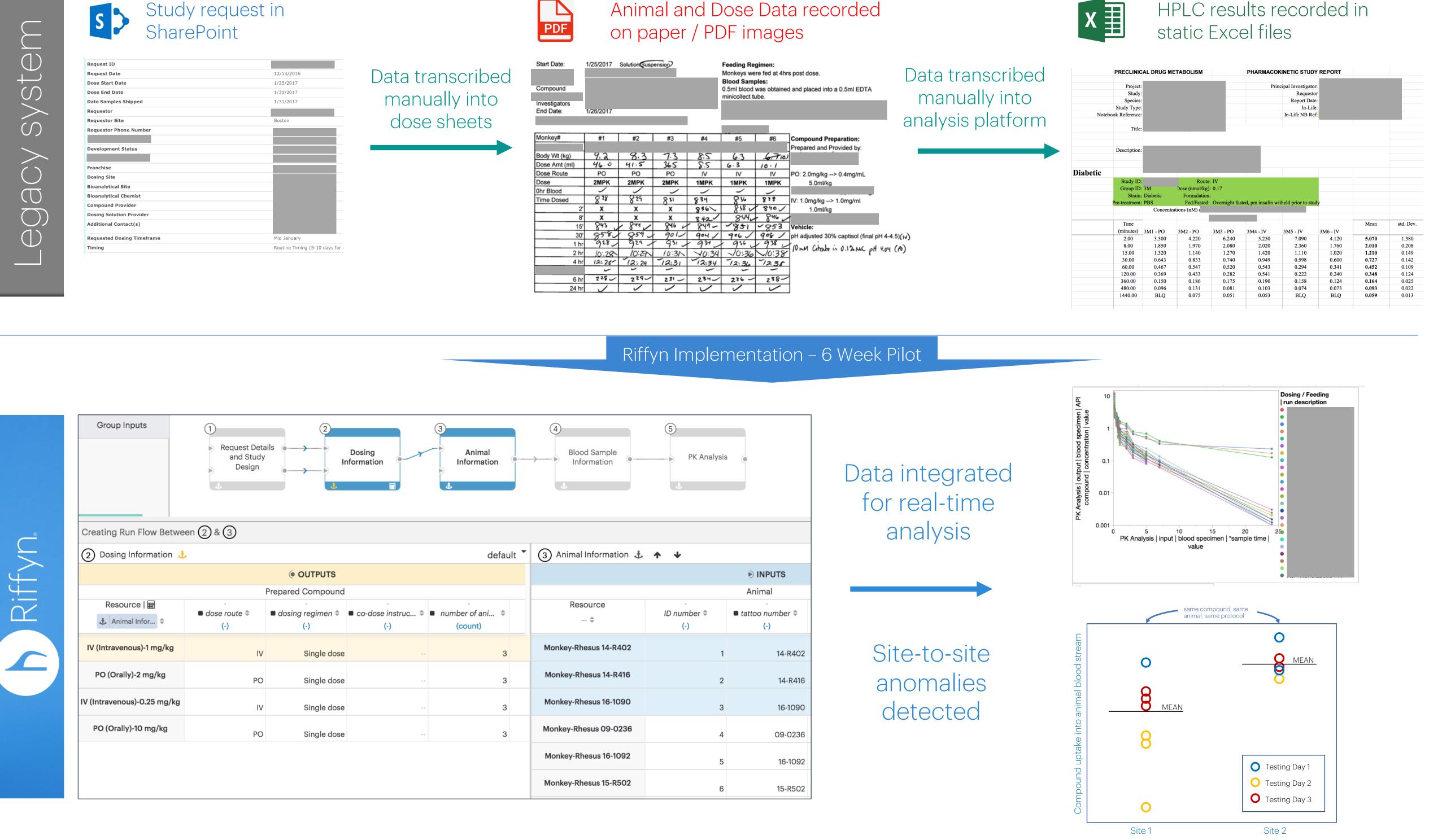
Impact Digital life cycle delivering 2X screening productivity, precision PD outcomes, & right-first-time scale-up



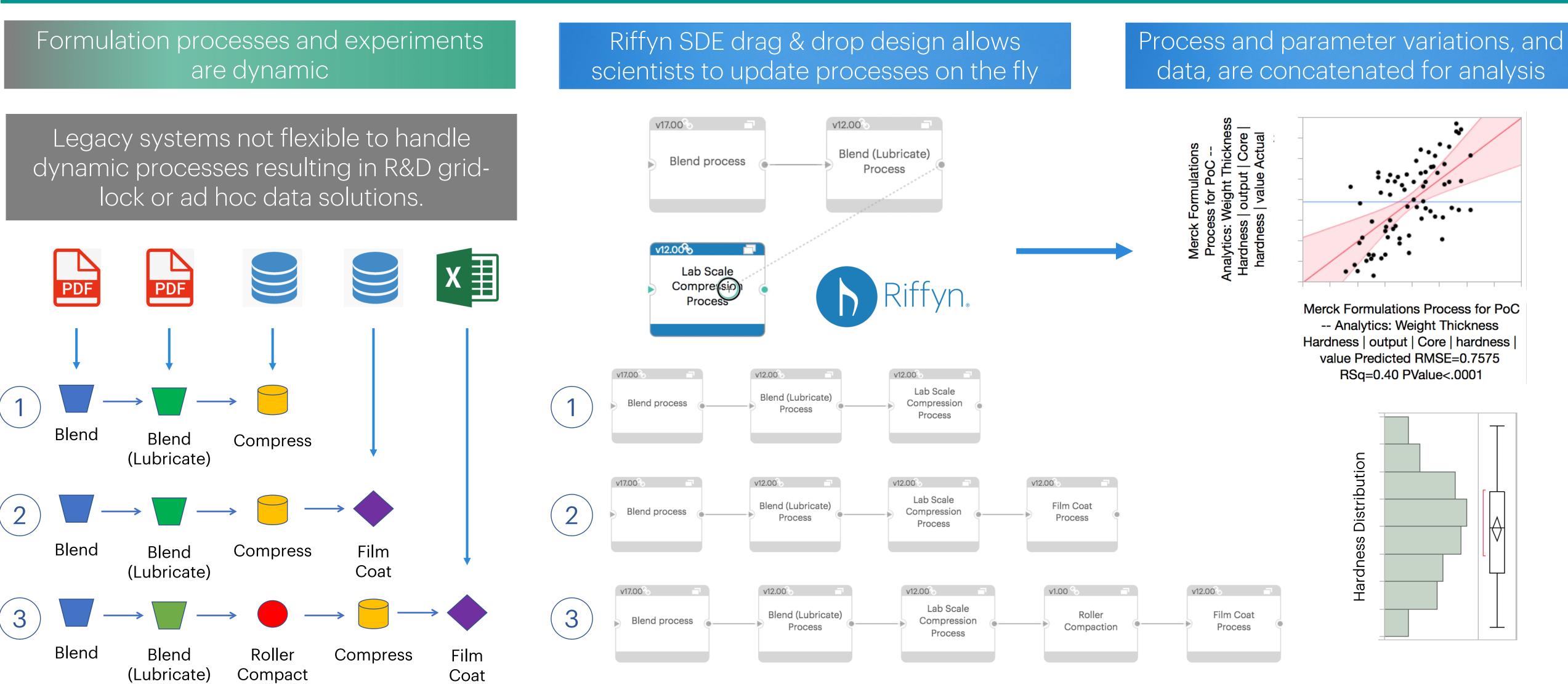
MACHINE LEARNING FOR

# Case Study 1: Resolving data silos and delivering integrative analytics in PK Studies

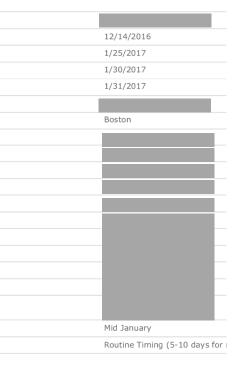
	Study re SharePo
	Request ID
	Request Date
	Dose Start Date
( )	Dose End Date
	Date Samples Shipped
	Requestor
$( \cap$	Requestor Site
$\bigcirc$ $\bigcirc$ $\bigcirc$	Requestor Phone Number
	Development Status
$\rightarrow$	
	Franchise
( )	Dosing Site
	Bioanalytical Site
	Bioanalytical Chemist
	Compound Provider
	Dosing Solution Provider
	Additional Contact(s)
	Requested Dosing Timeframe
	Timing



## Case Study 2: Adaptive data system & analytics for solid dose formulations



### equest in



PDF

## Animal and Dose Data recorded

Start Date:	1/25/2017 Solution Suspension				Feeding Regimen:		
					Monkeys we		s post dose.
Compound					Blood Sam		
Compound					minicollect to		and placed into a 0.5ml EDTA
Investigators					minicollect u	ibe.	
End Date:	1/26/2017						
Monkey#	#1	#2	#3	#4	#5	#6	Compound Preparation:
							Prepared and Provided by:
Body Wt (kg)	9.2	8.3	7.3	8:5	6.3	G.Tio.	
Dose Amt (ml)	46.0	41.5	36.5	8.5	6.3	10-1	
Dose Route	PO	PO	PO	IV	IV	IV	PO: 2.0mg/kg> 0.4mg/mL
Dose	2MPK	2MPK	2MPK	1MPK	1MPK	1MPK	5.0ml/kg
0hr Blood			~		~	/	
Time Dosed	8 28	829	831	834	836	838	IV: 1.0mg/kg> 1.0mg/ml
2'	X	X	X	836	838 ~	8401	1.0ml/kg
8'	X	X	X	842	844	- 846	ł
15'		844	846 ~	- 849-	-851	- 853	Vehicle:
30'	858	859	901/	904 /	906	908 /	pH adjusted 30% captisol (final pH 4-4
1 hr	0.45	929 /	931	- 934 /	936	938 2	
2 hr	10:28	10:29	10:3N	10:34	-10:36	10:38	10 mM Citrate in 0.120 MC pH 4.04
4 hr		12:29	-12:31	12:34	12:36	-12.35	1
	1	-	1	-	-	-	1
6 hr	228	229~	231 ~	234~	236 -	238-	1
24 hr		~	/	V	~	~	1
2410		-				-	1



<sup>2</sup>Merck Research Labs, Merck & Co., Inc.