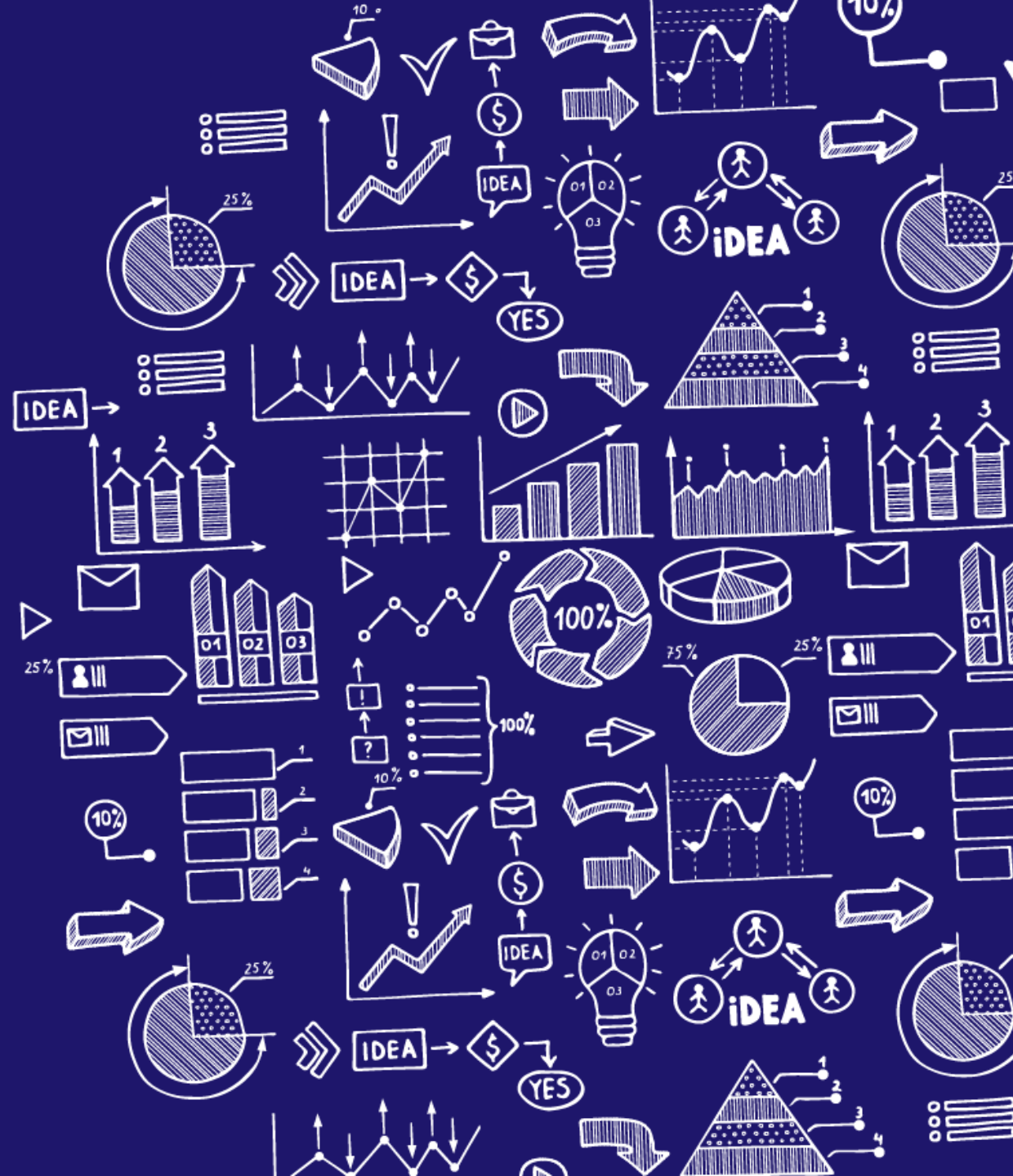


TRANSFORMING PHARMA MANUFACTURING PERFORMANCE USING LOW-CODE DIGITAL TWINS

2022



TODAY, DIGITAL TWINS ARE TRANSFORMING OUR INDUSTRIAL LANDSCAPE

Manufacturing

- Process optimization
- Predictive maintenance

Automotive

- Waste Management
- Quality Control

Pharma & Healthcare

- Yield optimization
- Machine optimization

Our focus area

Oil & Gas

- Production optimization
- Decommissioning cost rationalization

Logistics & Warehouses

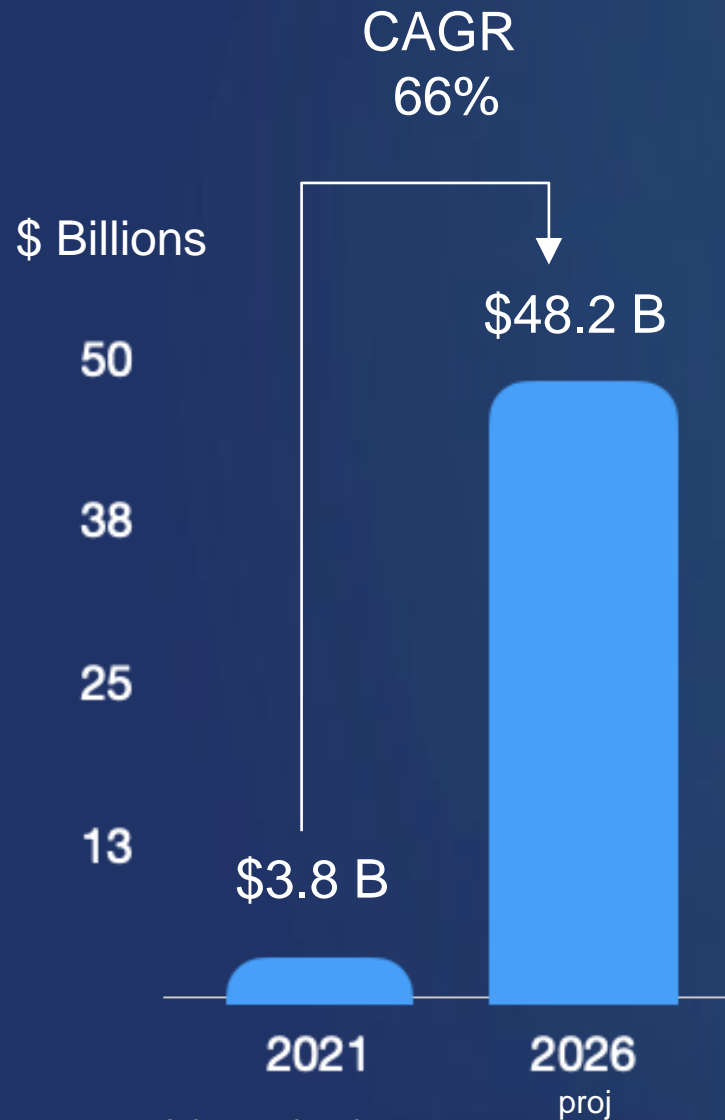
- Warehouse optimization
- Network Optimization

Smart Cities

- Urban planning
- Solve complex problems



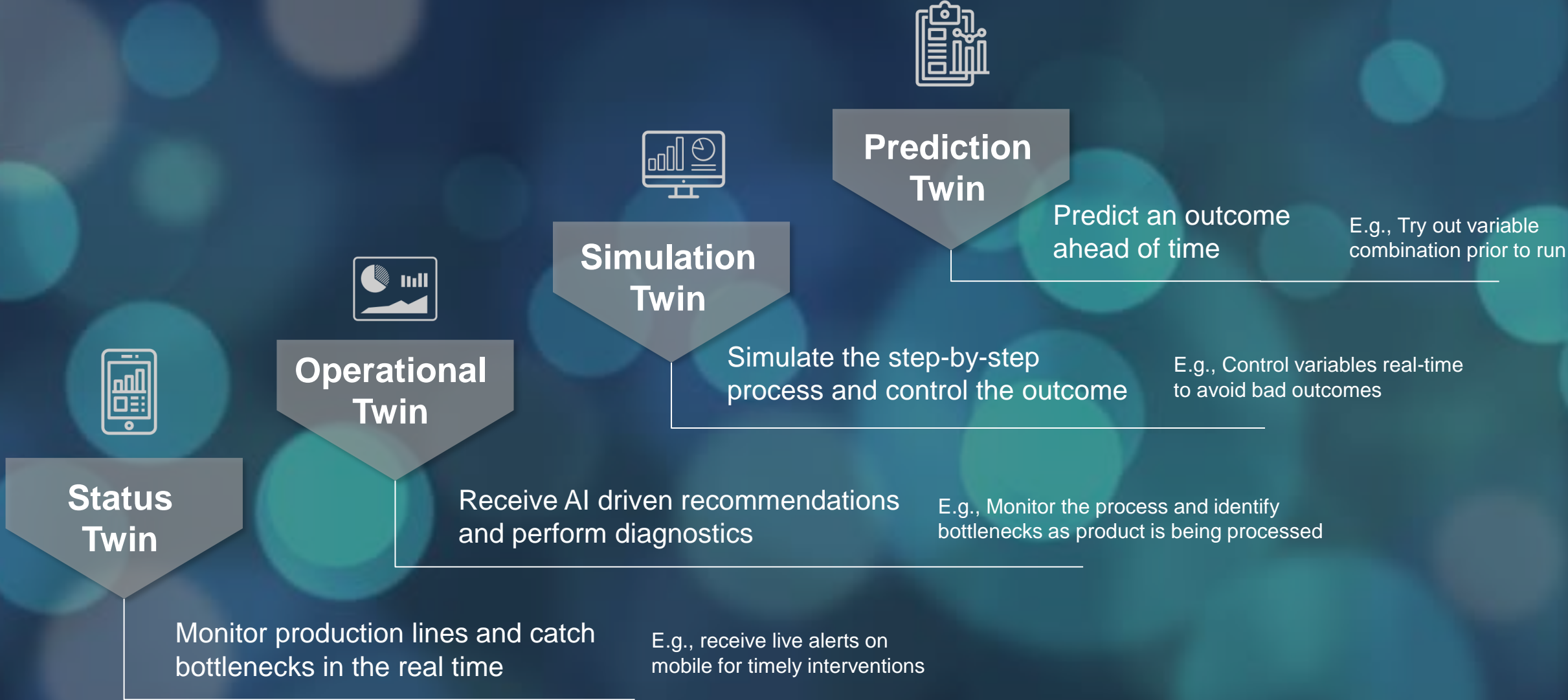
DIGITAL TWINS ARE GAME-CHANGERS THAT ARE SEEING EXPLOSIVE GROWTH



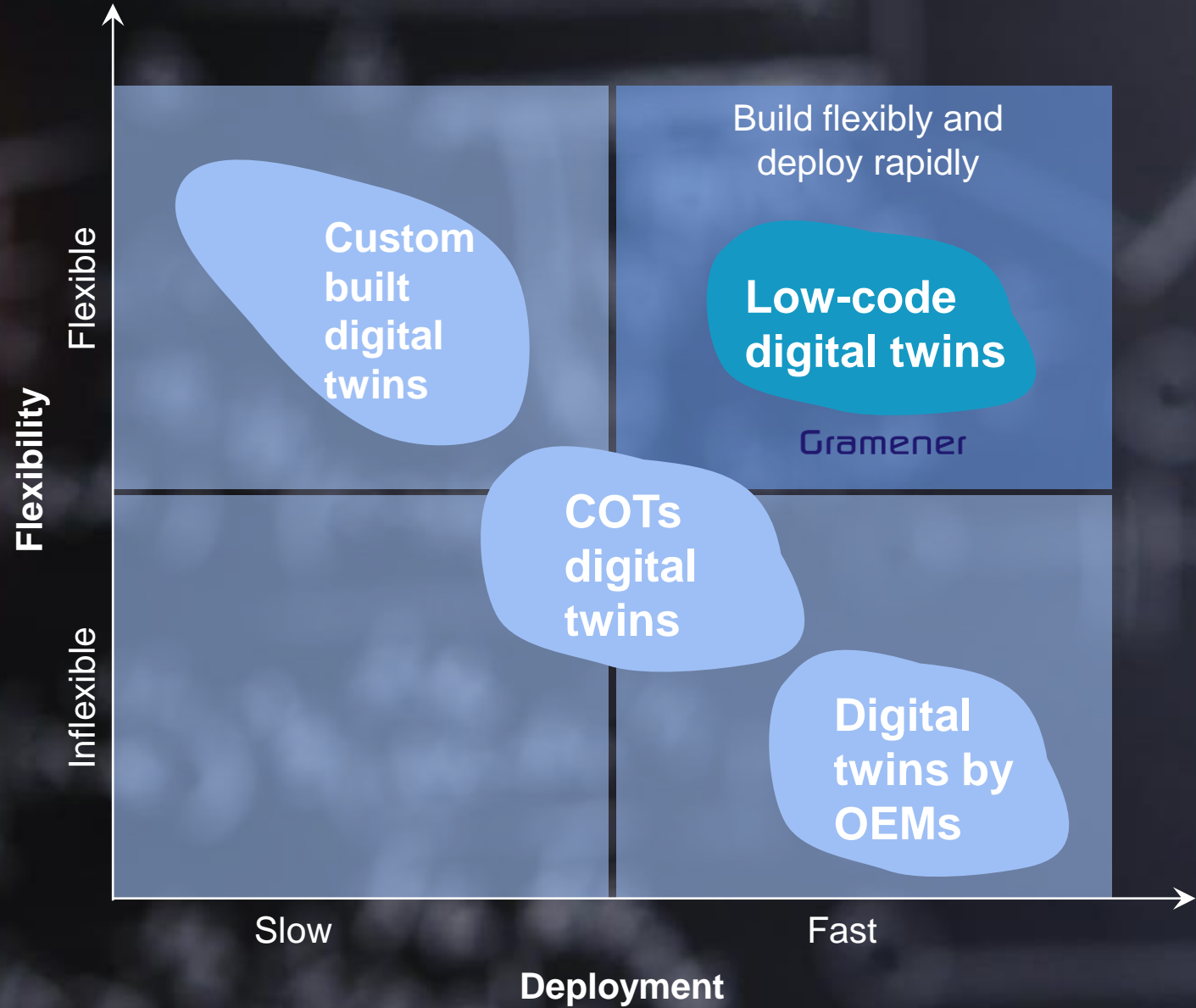
- 20% Manufacturing
- 20% Automotive
- 20% Residential & Commercials
- 10% Energy & Utilities
- 08% Agriculture
- 05% Health & Pharma** Our focus area
- 03% Retail & Consumer
- 15% Other

Our focus area

THERE ARE FOUR COMMON TYPES OF DIGITAL TWINS IN MANUFACTURING



LOW-CODE PLATFORMS ARE BREAKING BARRIERS AND UNLEASHING THE POTENTIAL OF DIGITAL TWINS



LOW-CODE DIGITAL TWINS HELP DRIVE COMPETITIVE ADVANTAGE

Expedited delivery

Up to 45% faster ~ beat than industry average



Easy to build

Develop high-end digital twin solutions with the click of a mouse ~ empowered citizen users



Rapid customization

Tailored specifically to your own industrial setup



Drive Innovation

Test multiple ideas in parallel and detect early what works for you the best



User friendliness

Drag & drop templates enable you create digital twins effortlessly

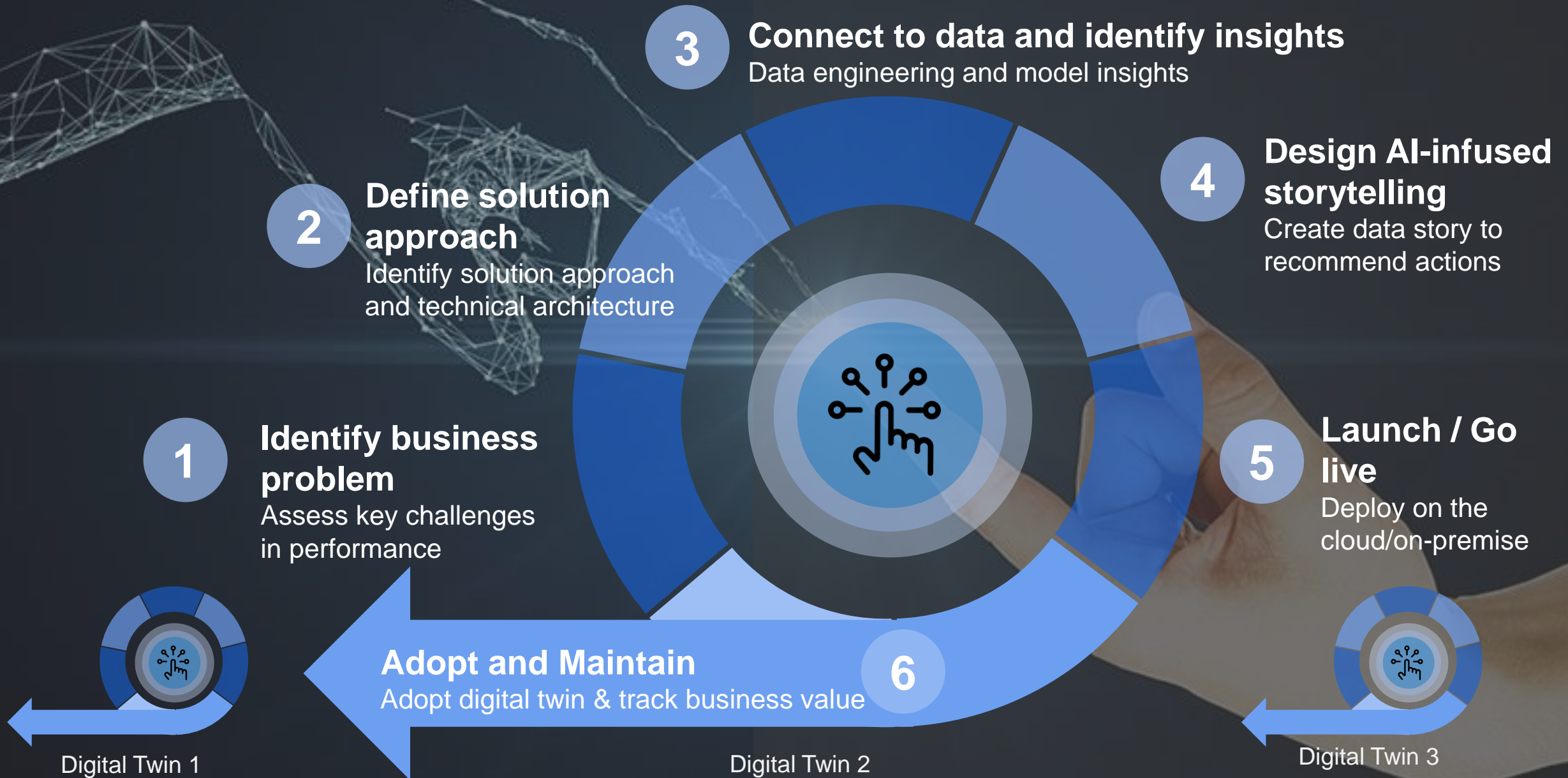


Unlock opportunities

Perform experimentation without making any physical changes on the shop floor



THERE ARE 6 STEPS IN THE CREATION OF LOW-CODE DIGITAL TWINS



THIS CASE STUDY SHOWS HOW PHARMA DIGITAL TWINS DELIVERED THE VALUE

\$6M

revenue/year (potential)

Industry

Pharmaceutical

Objective

Process optimization

Process

Tablet manufacturing

Digital Twin type:

- Operational Twin
- Prediction Twin



LET US DO IT TOGETHER - LIVE DEMO

[Contact us for a Live Demo](#)

 Process Digital Twin

Operational Prediction Data

Drug Manufacturing Process – Digital Model

Predict & prevent quality failures with machine learning



Operational Twin

Display in a large screen on the plant floor.
Operators can **see from far** when quality drops.



Prediction Twin

Find out if a batch will produce a good result
or a bad result — **without running it.**

Built by [Gramener](#)

Powered by [Gramex](#)

RISKS AND CHALLENGES YOU MUST WATCH OUT FOR DIGITAL TWINS



Interoperability



Security



Lack of expertise



Lack of proven technology



Limited customization



Integration challenges

WE ARE A DATA SCIENCE COMPANY : ADVISE, BUILD CUSTOM DATA/AI SOLUTIONS

We help enterprises with data transformation journey

120+
clients

1500+
apps

1M+
business users

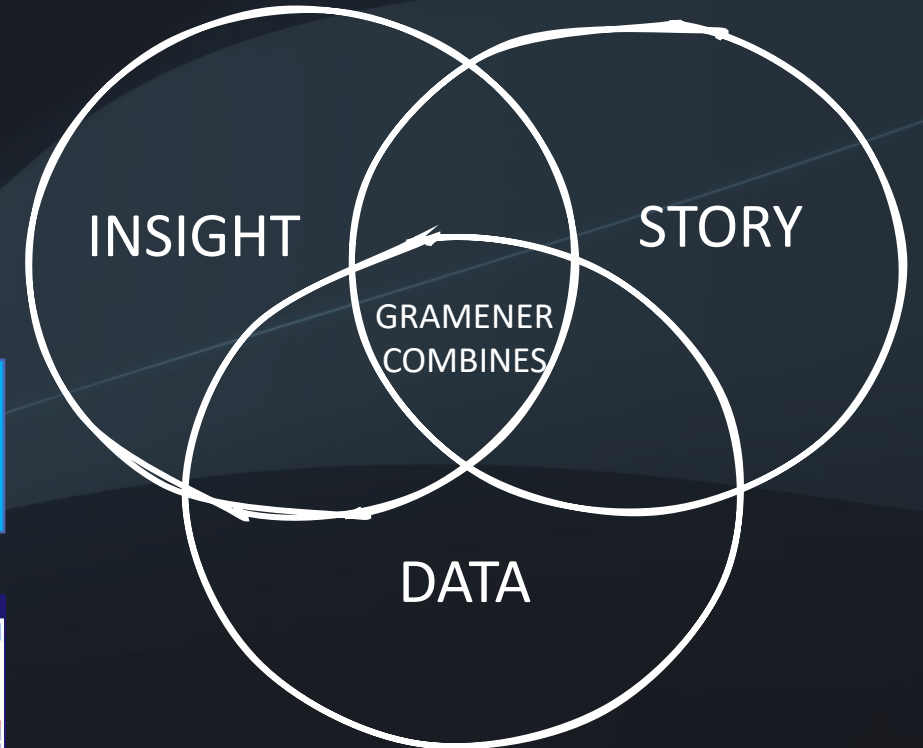
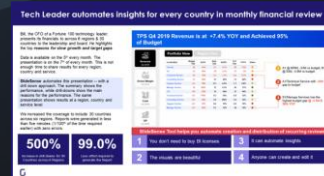
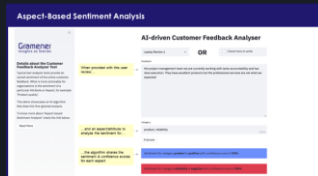
Our strategic focus areas in value creation

Computer
Vision

NLP & NLG
(Natural
language)

Digital Twin

Hyper
Automation



We bring the best of data **advisory**, implementation **solutions** and developer **platform** to help you scale up in data maturity

GRAMEX, OPEN STANDARD LOW CODE PLATFORM, TO ACCELERATE YOUR DATA JOURNEY

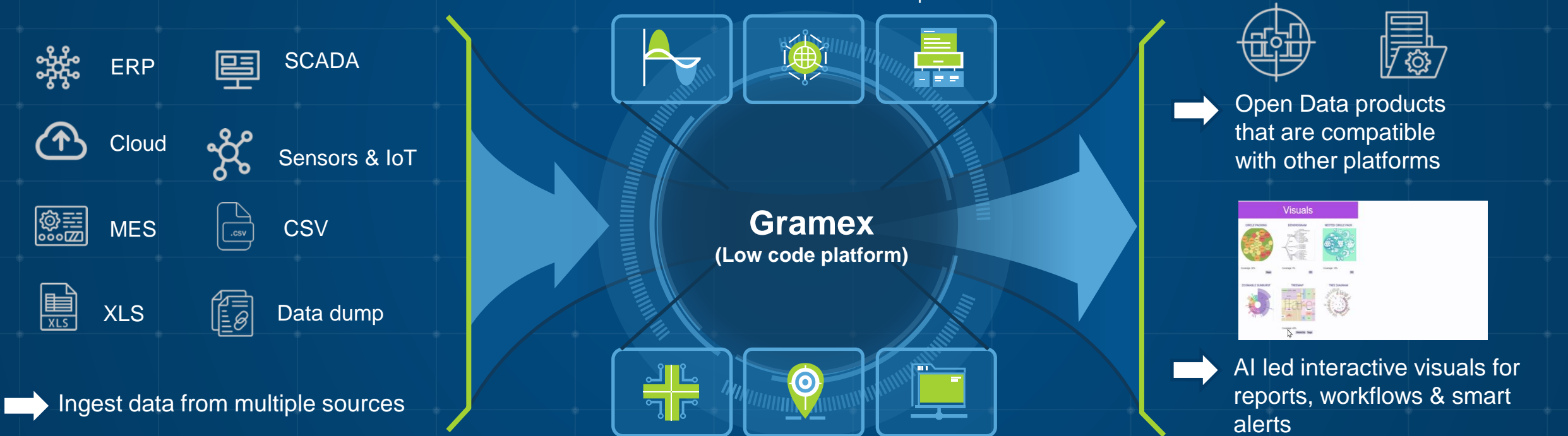
Gramex
Rapid data/AI solution builder with exception storytelling

45%
effort reduction

Rapid solution development

Cross compatible AWS, Snowflake

Compatible & integrated with IOT Systems, SCADA



Challenges

- Data governance
- Data integrity
- Data quality
- Data culture adoption

Benefits

- Rapid development
- Continuous & iterative
- Tailor made solution
- Automated insights

DROP BY AT OUR BOOTH#206 FOR MORE EXCITING CASE STUDIES

Equipment setup reduction in Pharma manufacturing



Type: **Operational Twin**

Reduced machine setup time by **67%**

Recommended optimal compressor settings to ensure correct tablet hardness, thickness and weight.

Manufacturing cost optimization industry Beverage bottling plant



Type: **Status Twin**

Cost rationalization: **\$4M**

Provided an integrated view of manufacturing cost and its relationship to component costs to identify cost saving opportunities.

Process yield optimization in Pharma manufacturing



Type: **Simulation Twin**

Saved cost over **\$2M**

Simulated the relationship between operational and material parameters to improve production yield for 10 compounds.

Intelligent Appointment Scheduler Manufacturing industry



Type: **Prediction Twin**

Decreased turn times by **16%**

Improved appointment scheduling by balancing outgoing appointments with load complexity and labour capacity.



**THANK
YOU**